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# Clinical Medicine and Surgery

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## ★ Editorial ★

# René Descartes

### Father of Modern Philosophy

MANY men, whose principal fame was achieved in other lines of endeavor, have made such important and fundamental contributions to the underlying bases of Medicine that their names must not be forgotten by those who practice the healing arts and sciences.

Prominent among these was René Descartes (or, in the Latin form, Renatus Cartesius), of France, who is best known as a philosopher and mathematician, but a number of whose discoveries and demonstrations are now an integral part of the fabric of medical thought.

Born at La Haye, in Touraine, in 1596, Descartes received his early education in the Jesuit school at La Fleche, and, at the age of sixteen, went to Paris, where he spent two years in the social gaieties appropriate to his age, and then retired to a secluded house in the Fauborgh St. Germain and began to give his time and thought to mathematical research and philosophic speculation.

But this remarkable man was no hermit or armchair philosopher. When the Thirty-Years War began (1619), he entered the military service for two years (it is related that, while in winter quarters at Neuberg, Bavaria, he laid the foundations for his famous "Discourse of Method"), and then spent the next four years traveling in Germany, France, Italy, and Switzerland, keenly and carefully studying and observing nature and people, in a definite attempt to free himself from tradition and develop a thought-system of his own.

When this pilgrimage was completed, he settled down, in bachelor quarters, in Holland, and devoted his life to study, thought, active correspondence with all the foremost thinkers of Europe (which kept his mind open and fresh), and to writing. In 1649, Queen Christina, of Sweden, persuaded him to come to Stockholm, but the first cold winter was too much for him, and he died February 11, 1650.

Although Descartes made large contributions to the science of numbers, his philosophical speculations and writings were far more important. He opened a new field in philosophy, as Columbus did in Geography, and Francis Bacon (Lord Verulam) in the physical sciences. It was he who first expressed the famous and oft-quoted formula, *cogito, ergo sum.*

Medical men will be especially interested in the facts that he was the first to show clearly the difference between mind and matter; the first to write a textbook on human physiology; and the first to demonstrate reflex actions in the nervous system, by showing that a man will blink his eyes if a blow is aimed at him (in *Des Passions de L'Ame*"—1649).

His famous differentiation was based upon the facts that matter cannot be thought of except as divisible and having extension in space, nor the mind except as indivisible and free from spatial extension.

His book on physiology ("*De Homine*"—1662) was a popular and theoretic treatise, like Herbert Spencer's "Principles of Biology," and considered the human body as a material machine, directed by a rational soul located in the pineal gland. He recognized the importance of Harvey's work, but, as a theoretical Galenist, ascribed the heart's movements to its internal heat.

While we now know that some of the conclusions of Descartes were mistaken, we must estimate the originality and value of his work against the background of the most alvanced thought of his time, and when we do this, we recognize that he deserves a place among the greatest scientists of the world and merits the title, Father of Modern Philosophy.

Belief can cause us to reject a chance to *know*, and then belief is a menace, not a help.—FRITZ KUNZ.

## Life and Growth

ORTHODOX science now recognizes, more or less fully, that all things in the universe are alive; but we still think in terms of living and non-living things.

One of the standards by which we judge whether a thing is alive or not is the fact that live things grow. First, they grow in size until they have attained maturity and then they grow in quality—strength, beauty, resourcefulness, or whatnot.

A man grows larger from birth to adulthood. From then on his growth consists in enlarging his powers and abilities; his knowledge, sympathy, wisdom, and compassion. This should continue as long as he lives—and it *does;* for if he stops growing he is *dead*, even though his carcass may wander about for a while.

Growth implies nutrition. If the child is not fed properly he will not grow into a sound and normal man. The later growth requires proper feeding, also; experience, love, service, duties well and faithfully performed—these are the food upon which the soul grows.

But the quality of livingness does not come to us from some outside source. You can cram a bag with the most nutritious food in the world—and it is still a bag. Life is generated within us, somehow, though the scientist cannot find out the way it is done.

The pabulum for growth comes from our environment—that which we eat, for growth in size; experience, to nourish our faculties and powers—but that which enables us to select the proper food substances for the body and the soul, and to build them into our physical and spiritual structure, is inherent in us as living beings—God-given, but not from some external source; rather, because there is something godlike within us—we are creators and arbiters of destiny.

We spend a large proportion of our time in earning, planning, and preparing food for our physical bodies. One wonders what would happen in this world if everyone spent one-quarter the amount of time on the problem of his mental and spiritual nutrition that he spends on his "three square meals a day."

And then, there are the organs in our bodies, each interesting and important, but chiefly worthy of our attention because they are active parts of those organisms that we call "us." If any one of them stops working entirely the whole body dies; if they function feebly or ineffectively we say, "The man is ill."

If any group of individuals means anything at all, it is because it is a *living organism*, of which its members are the organs. But, is it living? The only way we or others can judge of that fact is to observe whether or not it grows in interest and power. If it does not grow it is dead, and it is only a matter of time before the processes of decay will set in.

In order to grow, any organization needs food, the same as any isolated organism—enthusiasm, thought, and service. Are *we* providing these things? If not, who will suffer?

If the body dies the soul is released, but all of the organs that make up that body die, too. The brain knows that it must provide sustenance for the liver and heart and spleen, for if they suffer or die, it suffers or dies with them. It would seem that the maintenance of the health and activity of our various medical societies is a form of professional self-preservation. Let us mediate seriously along these lines. Growth is the measure of life. If we can find out how fast we are growing—as individuals or as a group—we can judge how fully we are living, or whether we are alive at all.

He who stops being better stops being good.
—OLIVER CROMWELL.

## Prejudices

FEW things interfere so seriously with sound and logical thinking as do the prejudices of the actual or ostensible thinkers. When an idea is presented to us, it is frequently distorted out of all resemblance to its original form by the time it has run the gantlet of our preconceived opinions and entered the mind.

Etymologically, the word prejudice comes from the Latin *pre* (before) and *judice* (to form a judgment). That is, the prejudiced man makes up his mind (or, rather, his *emotions*) about things before hearing the evidence. An opinion formed by reasoning from sound evidence is not a prejudice, however strongly it may be held.

Our prejudices are, very largely, forced upon us (if we permit that to take place) by our parents, our teachers, the members of the social group in which we move, and by paid or voluntary propagandists. It is pitiable to think of the number of people who are prejudiced against Negroes, Roman Catholics, Democrats, birth control, hospitals, companionate marriage, and thousands of other things. The psychiatrists call such reactions "complexes," and their basis is always *emotional*, and, therefore, not amenable to reason, which is essentially intellectual.

The surprising thing about it is that otherwise-intelligent men and women often continue to entertain prejudices, in the face of reason, common sense, and established facts, when their conduct in other lines would lead us to expect them to show a normal and rational reaction.

The only possible explanation of this curious phenomenon is that these people keep their pre-

judices in thought-tight compartments of their minds, where they cannot be reached by new ideas nor by the most logical of arguments, for otherwise these fossilized and anachronistic opinions would be sure to undergo some modification—which they obviously do not.

Two practical points are derivable from these suggestions: (1) If we want to be sound, sane, all-around human beings, we must break down the partitions in our minds, so that the sunlight of reason and new discoveries can flood the whole place; and (2) it is a waste of time, breath, and frequently of temper and equanimity, to argue with a prejudiced man about his prejudices. Nothing reasonable will go through the partitions and no one but himself can remove them.

Great scholarship in no way precludes great bias and prejudice; nor is it a safeguard against vanity and pride.—H. P. BLAVATSKY.

## Histaminase in Allergy

RELATIVELY recent studies by physiologists have shown that the intramuscular injection of small doses of histamine will cause symptoms similar to those seen in traumatic or anaphylactic shock, along with an urticarial wheal at the point of injection.

This is not the place to go into details of physiologic experiments. It is sufficient to say that there is a widespread and growing impression that an excess of histamine in the body is responsible for many of the manifestations which we call allergic.

The only direct antidote for histamine is an enzyme, produced in the body, which destroys it, and is, therefore, called histaminase.

Within the past year, histaminase has been prepared commercially, from the mucosa of the small intestines and kidneys of hogs, and is put up in tablets, to be given by mouth in accurately adjusted doses. Excellent results from the clinical uses of this remedy have been reported in cases of hay fever, asthma, urticaria, hypersensitiveness to insulin and certain other drugs, serums and physical agents (light, heat, and cold), as well as in certain skin disorders, notably eczema and acne.

The approaching hay fever season will bring physicians many patients who are eagerly seeking relief from seriously distressing (even if not dangerous) symptoms; who have tried various treatments without success; and who object to receiving long courses of desensitizing injections, which frequently result in little benefit.

This will be an excellent opportunity for those medical men who like to do a bit of clinical research, along with their practice, to familiarize themselves with the powers, properties, and indications for histaminase, and then try it in a few cases, under controlled conditions, *keeping careful records.* By the end of the season, such men will have made definite additions to their medical knowledge, and will be in a position to make contributions to the literature of a new product which is still in the experimental stage, but gives a clear promise of being of positive therapeutic value.

**NEXT MONTH**

**Dr. Wallace Marshall, of Appleton, Wis., will present a preliminary report of three cases of dizziness due to hypertension, successfully treated with histamine phosphate.**

**Dr. David N. Ingram, of Huston, Pa., will outline the evidence for the specific action of quinine in staphylococcus aureus infections, and report a difficult case treated with this drug.**

**Dr. George B. Lake, of Waukegan, Ill., will offer some pertinent and practical suggestions and details of medical writing.**

**COMING SOON**

**"The Endocrines in Old Age," by H. J. Achard, M.D., Glendale, Calif.**

**"Colloidal Manganese in Acne and Psoriasis," by William G. Watt, M.D., Springfield, Mass.**

### PRIEST TO BEAUTY

*Goodness and Truth each has her devotees*
*And I would worship with them, nothing loth,*
*Had I no goddess, lovelier than these,*
*To claim my adoration and my troth.*

*But I am priest to Beauty. At her shrine*
*I daily find the good, the true, the wise,*
*When on her altar I pour oil and wine*
*And kneel to her dear lips and limbs and eyes.*

*G. B. L. in "Eros and the Sage."*

* *Leading Articles* *

# Intransfusible State Following Liver and Venom Therapy*

*By*
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A HEMATOLOGIC condition, characterized by extreme refractoriness to transfusion and believed to be caused by parenteral liver and venom administration, is significant for two reasons: (1) A patient in a hemorrhagic state is further imperilled by contraindication of the indispensable remedy, blood transfusion; and (2) some hitherto unexplainable transfusion reactions may be due to allergy induced by antihemorrhagic therapy. To my knowledge, this is the first recorded instance of an intransfusible state associated with an allergic response to biologic hemostatic agents. The sensitivity to the blood of a repeatedly used donor, occasionally developed by a recipient, is a close analogue to the situation to be described.

A refractory state is seen in hemolytic jaundice,[1] in which transfusion has at times proved fatal. Other recognized causes of unwonted reactions are severe toxemia, as indicated by marked toxic granulation of the neutrophiles; profound sepsis; hyperacidity of the recipient's urine[2]; and the existence of unsuspected blood subgroups in the donor or recipient[3]. All of these factors were apparently absent in the present instance.

Though little has been written on the subject, it has been recognized that extreme care must be exercised in the selection of donors for allergic individuals[4]. Urticaria and eosinophilia, which are believed by Fantus[5] to follow the occasional allergic response to transfusion, were not seen in this case. In a patient without previous signs of allergy, sensitization was induced to moccasin venom and three varieties of liver extract. Subsequently, of fourteen persons belonging to the same group (Landsteiner 0), only one could be identified as a suitable donor.

## Allergy to Venom and Liver Extract

The use of dilute crotalic (moccasin) and bothropic (fer de lance) venoms and antivenins, in the treatment of hemorrhage and hemorrhagic states, is well established. The sensitization produced by the venoms is thought to consist of an altered osmotic state of the capillaries, diminishing permeability—the socalled Shwartzman phenomenon[6]. Other effects, notably the increased production of agglutinins in recipients of antivenin, likewise have been recorded[7]. It has not previously been thought, however, that agglutinins could, in this manner, be so augmented as to make transfusion dangerous or impossible. In contrast to these occult manifestations of sensitivity to venom, local reactions at injection sites are routinely seen, serving as an index of dosage.

*Received for publication, March 1, 1940.

It has recently been indicated[8] that the agglutinin-titre of a "universal" donor should be established as being low before his blood is used. Of greater importance, in view of my experience, is repeated determination of the agglutinin-titre of a frequently-transfused recipient.

Allergy to liver extract has been reported[9]. In the instance recorded by Gardner[10], uterine bleeding was a constant phenomenon following liver administration; whereas, in my experience, it has, alone and in combination with venom, induced a relatively intransfusible state. The painful indurated areas, produced in many individuals by liver injections, may be evidence of sensitivity to liver extract. They were not so interpreted by me until unexplained transfusion reactions led to a careful scrutiny of possible causative factors.

## Case Protocol

*First Admission:* A man, age 52, entered the Anglo-American Hospital, Havana, in June, 1937. He had had gastric hemorrhage and melena for four days. There was a vague history of intermittent indigestion for a number of months. Excepting signs of exsanguination, the physical examination was negative. There was no history of personal or familial allergy. Erythrocytes numbered 1,820,000, and the hemoglobin (Sahli) was 35 percent.

The patient was typed with potent A and B serums, and he was found to be of Group 0 (Landsteiner). Cross-matching with two professional Type-0 donors (W and X) caused no agglutination on either side.

On the second day in hospital, liver extract (Campolon, 2 ampules) was given intramuscularly, in addition to calcium gluconate. On this day, a citrated transfusion of 450 cc. was also given, from Donor W. The patient's temperature reached 101° F. On the third day, calcium, liver, and whole ovarian extract were injected intramuscularly. Ovarian extract was used for five days, for its antihemorrhagic factors. Calcium and liver were given until the twenty-third day, when liver alone was used (Lilly's concentrated) until the thirty-fifth day.

A citrated transfusion (450 cc.) was given from Donor X on the fifth day, and the patient's temperature was later 102° F. During this period melena was constant, and the fever was attributed to absorption of blood-decomposition products. On the eleventh day, his erythrocytes numbered 2,630,000, and hemoglobin was 43 percent. Bleeding was thought to have stopped on the fourth hospital day, and did not recur.

On the fifteenth day, a citrated transfusion from Donor W (450 cc.) was followed by a chill and temperature of 104.5° F. Then followed an afebrile period of four days, when a radiographic diagnosis of duodenal ulcer was established.

A rising temperature heralded the formation of an abscess of the left hip, at the site of a liver injection. This was opened and drained on the twenty-eighth day. Ten days later, a similar abscess was incised on the right hip. On the fortieth day, a citrated transfusion (500 cc.) was given from Donor X, followed by temperature of 102.5° F. On the forty-first day, the erythrocytes were 3,920,000 and the hemoglobin 75 percent. The patient was discharged on the fifty-ninth day.

Because of the overshadowing importance of the hemorrhage and dangerous illness, significance was not attached to the formation of painful, indurated areas after the injection of two varieties of liver extract. When it was evident that an abscess impended, liver therapy was discontinued. Fever, attending transfusions one and two, was attributed to internal absorption of toxic blood products; that following transfusion four was associated with the elevated temperature of the liver injection "abscess." The definite reaction to tranfusion three was laid to technical difficulty in the use of a small caliber needle. The donors were not rechecked, since perfect compatibility was indicated by the first investigation. It is interesting to note that blood regeneration was rapid, despite intolerance to liver extract and transfusion. The patient was given an ulcer-convalescent diet, with aluminum hydroxide tablets. Abscessed teeth were removed, and alcohol and tobacco interdicted.

*Second Admission:* In May, 1938, a severe gastric hemorrhage, with collapse, occurred, and the patient entered the hospital on the second day. Again, the general condition was adequate, but the bleeding was massive. On the fourth day, the erythrocyte count was 2,200,000, with hemoglobin 39 percent.

Donors W and X were cross-matched and again found suitable, without agglutination on either side, and a citrated transfusion of 450 cc., from Donor X, was given on the second day, with a temperature rise to 100° F. Vitamin C and whole ovarian extract were injected daily until the fourteenth day, and liver extract (Reticulogen) was added on the fifth day and continued until the operation. Hemorrhage apparently ceased on the ninth day. Moccasin venom (0.5 cc. daily) was begun on the ninth day, and discontinued with the liver extract.

This over-zealous antihemorrhagic treatment was administered because of the unfavorable age of the patient, and the fact that obesity was considered a contraindication to surgical approach during the bleeding episode. A liberal soft diet was supplied throughout the hemorrhage, and gelatin, adrenalin (epinephrin) solution, and magnesium trisilicate tablets were administered by mouth.

On the fourth day, a 500 cc. direct transfusion was given from Donor Y, who was also a suitable match. This was followed by headache and a temperature of 101° F. On the eighth day, 500 cc. of citrated blood were injected from Donor X. The sequelae were a slight chill, headache, and a temperature of 100.5° F.

Since these transfusions were made during the febrile period of decomposition of blood in the gastro-intestinal tract, no particular significance was attached to the "reactions." On the tenth day, 500 cc. of blood were introduced, by the direct method, from Donor Y. This was the first day since admission that fever did not occur. The blood picture was then: erythrocytes, 3,980,000; hemoglobin, 77 percent.

Preparations for surgery included a search for possible future donors. Twelve new Group 0 professional donors were cross-matched; of these only one, Donor Z, showed no agglutination on either side, but slight rouleau formation. Donor W's cells were rapidly clumped by the patient's serum, while Donor X's cells were definitely rouleaued after 20 minutes. Donor Y was not available for re-testing.

On the nineteenth day, the patient's belly was opened under avertin-fluid-nitrous-oxide-oxygen anesthesia, and a large ulcer crater was palpated low on the posterior wall of the duodenum. Posterior gastro-jejunostomy was performed. Petechiae were noted in the gastrocolic and great omentum. Reaction was satisfactory.

Although there had been no gross signs of hemorrhage, a 500 cc. citrated transfusion was given from Donor Z on the day after operation. This was followed by a chill and temperature of 102° F. Cross agglutination tests of the patient and Donor Z were then repeated, and rouleau formation of the donor's cells was significantly increased, in 20 minutes, over that of the previous matching. It was recognized that a refractory state existed. The patient was discharged in good condition fifteen days after operation. The blood picture was: erythrocytes, 4,610,000; hemoglobin, 90 percent. Blood regeneration had again been rapid.

### Subsequent History and Comments

Subsequently, aseptic fat necrosis developed in the patient's wound. This was interpreted as evidence of an allergic response to chromicized catgut.

Intradermal skin tests were conducted with four allergens: Vitamin C (Cantan); liver extract (Reticulogen); whole ovarian extract; and moccasin venom (0.1 cc. of each). Vitamin C and ovarian extract produced no reaction; liver extract caused a grade-two flare; while venom produced a painful red swelling of the entire forearm.

Since autohemotherapy is considered by many to be superior to injected thromboplastic agents in the control of hemorrhage, the assimilation of blood metabolites from the patient's own intestinal tract may have played a part in establishing or augmenting his allergy to homologous blood[11].

Davidsohn's study of blood subgroups[3] would explain the reactions by the assumption that the recipient actually belonged to Group $A_2$, possessing the rare and exceedingly powerful iso-agglutinins $A_2$. This would cause his serum to clump the supposedly non-agglutinable cells of Group 0. Repeated typing of the recipient with potent serums, which invariably established him as a Type 0, make this explanation unlikely. Davidsohn's own recommendation, that typing-serums of individuals with serum sickness be used, because of their high ag-

glutination titre, is a point in favor of the development of exceptionally potent iso-agglutinins in this recipient, as the result of a sensitization phenomenon.

In order to obviate occurrences such as this, persons undergoing treatment with biologic antihemorrhagic substances should have frequent cross-matchings with donors already pronounced suitable for transfusion. Repeated determinations of the patient's agglutinin-titre should also be carried out.

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United Fruit Co. Hospital.

# A Symptom Clinic*

*Reported by*

R. L. Gorrell, M.D., Clarion, Ia.

## GENERALIZED ITCHING

*By Ruben Nomland, M.D., Iowa City, Ia.*

SCABIES is the most common cause of generalized itching and should be ruled out first. The three diagnostic points are: (1) Several members of the family or group are affected; (2) the itching is worse at night; and (3) vesicles are found on the sides of the fingers and palms, in children, and on the penis in men. Danish ointment, applied on 2 successive nights, is the most successful treatment, although any sulphur ointment is usually effective. Overtreatment leads to pruritus.

*Senile, winter, and bath itch* are next most common causes of generalized pruritus. The patient usually *rubs*, not scratches. These conditions are worse on the extensor surfaces of the arms and legs.

*Bath dermatitis* is commonly found in women who take an excessive number of baths or who are allergic to soaps or perfumes. Redness and dryness of the skin of the extensor surfaces of the arms and legs are the usual findings.

*Senile pruritus* occurs during the sixth decade of life; the prognosis is poor. The prognosis for winter pruritus is fairly good, and for bath dermatitis, good.

*Urticaria:* Either the chronic papular urticaria of infants or the hives of adults are fairly common causes of generalized itching.

*Eczema:* Contact dermatitis and exfoliative dermatitis are less common causes; all other skin diseases usually cause localized itching.

*Hodgkin's disease:* Intractable itching, to which no cause can be assigned, appearing *for the first time* between the ages of 20 and 40, should be considered an indication to search carefully for Hodgkin's disease or leukemia. Nephritis and diabetes are rare causes of itching.

*Treatment:* (1) Internal therapy, to decrease sensitivity; (2) local therapy to decrease local sensitivity and irritation; and (3) antipruritic applications.

*Internal treatment:* Five (5) grains (325 mg.) of acetylsalicylic acid (acetosal), given two or three times daily, and 1½ grains (100 mg.) of phenobarbital, given at bed time, are of great value.

*Soap should not be used and baths should not be taken.* Skin irritation should be avoided (chemicals, cleansing agents, bath salts and powders, perfumes, rouges). A *soothing bath* may be made of ½ pound (250 Gm.) of soluble starch, in a tubful of lukewarm water. An *oatmeal bath* is made by boiling 1 cup of oatmeal, in a bag, for 5 minutes, and then placing the bag and water in the tub, together with 2 tablespoonfuls of baking soda. The bag is squeezed and used as a washrag. After the soothing baths, drying should be carried out by patting. An oily solution is then applied, such as calamine *liniment* N.F. (oil plus limewater), with ½ percent phenol.

*Antipruritic applications:* The *cost* of antipruritic preparations must be watched, as large quantities of medicine must be used in treating generalized itching. Calamine *liniment* with ½ percent phenol; 5-percent boric acid ointment with menthol, in cold cream or petrolatum; Lassar's paste, diluted once or twice with vaseline, are preparations of much value for night use. Calamine *lotion* may be used during the day, but as it is drying to the skin, it should be used interchangeably with oily preparations.

## HEADACHE

*By John Parsons, M.D., Des Moines, Ia.*

A headache due to hypertension causes the patient to wake up at night. Many headaches, supposedly caused by hypertension, are in reality the result of the causative *nephritis*. This can be proved, as reduction in the blood pressure *increases* such headaches.

*Presented before the Iowa State Medical Society, at Des Moines, Iowa, May 3, 1940.

The gastro-intestinal causes of recurrent headache are few. An occasional person suffers headache because of constipation.

*Rheumatism,* involving the cervical (neck) muscles, is a common cause of headache. This is the occipital or nape of the neck headache, which may radiate toward the front of the head.

*Syphilis* may cause headache, either during the early or late stages. The pain is usually dull in character.

Otolaryngologists feel that sinusitis and upper respiratory infections are not common causes of headaches.

*Migraine* headache is a pulsing, unilateral pain, readily relieved by ergotamine tartrate. The latter (marketed under the trade name "Gynergen") may be used as a therapeutic test.

*A headache that wakens the patient from sleep is almost always organic in origin.* If stooping or shaking the head increases or brings on the pain, organic disease should be suspected. If tenderness is found in the muscles below the occiput, rheumatism is the probable cause.

## BACKACHE

### Medical Aspects

*By H. W. Rathe, M.D.,*
*Waverly, Ia.*

Backache is a valuable differential diagnostic point between *smallpox* and *chickenpox.* The backache of *nervous exhaustion* is relieved by rest, and it usually wears off by evening, when most organic backaches are increasing.

*Herpes zoster* may cause a severe pain in the back, which radiates around anteriorly. The diagnosis is often difficult until the eruption appears, three or four days later. A spinal *cord tumor results* in local tenderness and pain.

### Orthopedic Aspects

*By Arch F. O'Donoghue, M.D.,*
*Sioux City, Ia.*

The most common cause of mild backache is poor posture. Each joint functions best and has the greatest safety factor when it is in neutral position, halfway between flexion and extension. The back is almost fully extended at all times when a person is standing erect. An increase or exaggeration of this extension results in back pain. Trauma, weight increase, certain types of work, and pregnancy cause such exaggeration of normal back extension.

The back may be considered in the same way that one considers the mainmast of a sailing boat. It is supported by stays on each side, and also front and back. The erector spinae group of muscles in the back and the recti abdominis in the front act as guy-wires or stays, and the lateral abdominal muscles act similarly.

As a compensation for increased lordosis, the angle of the lumbo-sacral joint is gradually increased until it becomes a right angle.

*Treatment:* A support should be used at first, with steel braces, which gives definite support to the back muscles, and a series of muscle-training exercises should be carried out.

Swimming, crawling, toe touching, straight leg raising, prone falling to the wall or floor (as strength increases), all are of value. Rest for 15 minutes after exercise is to be ordered.

### Gynecologic Aspects

*By William F. Mengert, M.D.,*
*Iowa City, Ia.*

If backache is caused by a gynecologic condition, examination will almost always reveal a well-defined lesion which is readily recognizable. Backache may be caused by pressure or traction, induration or infiltration, of the pelvic cellular tissues or peritoneum.

*Chronic endocervicitis,* causing a posterior parametritis (readily diagnosed by rectal examination), is a direct, common cause of backache.

The uterus is a mobile organ, so that *there is no normal position* for it. Retroversion is a *rare* cause of backache. It is only *one* of the many positions in which the uterus may be found, and it seems unreasonable to say that this one position will cause symptoms and the others will not.

During *menstruation* and *pregnancy,* a relaxing hormone is secreted which causes relaxation of the sacro-iliac joints, with resultant discomfort. A sacro-iliac lesion may cause *abdominal* pain. Tight strapping with adhesive tape is a simple therapeutic test.

## INDIGESTION AND ABDOMINAL PAIN

*By William D. Paul, M.D.,*
*Iowa City, Ia.*

The patient whose abdominal symptoms are the result of a neurosis will be benefited by a carefully taken history. The intelligent patient will need little else, except for reassurance.

*"Heartburn"* (substernal warmth) is a functional complaint, due to motor disturbance of the stomach. Burning sensations over the abdomen are usually the result of a neurosis.

The diagnosis of *peptic ulcer* may be made by a history of recurrent attacks, especially during the spring and fall. Each attack tends to be a little more severe than the preceding one. *Carcinoma* patients give a short history, with gradual onset.

Thin patients who complain of discomfort, feel the epigastric area, and detect the pulsation of the abdominal aorta, need only encouragement and a weight-gaining diet, to be relieved.

Lesions of the spine must be ruled out in making a diagnosis.

*Allergy:* Almost every patient questioned is sensitive, or thinks that he is, to some food, so that even the definite demonstration of allergy does not rule out other causes of indigestion or abdominal pain. Skin tests are of little value in diagnosing these conditions; recourse must be had to the *"food diary"*—a record of every food eaten every day, and notation made of the time of occurrence of symptoms.

*Ulcer treatment:* The ulcer patient should not be made a neurotic by rigidly enforcing some pet diet scheme. He should be told, "Eat the foods you like, but eat them slowly and not when you are rushed or worried; live regularly; *do not take laxatives.*"

*Treatment of functional diseases:* Do not give a patient medicine unless it is necessary. Rest, regular meals, and no laxatives (mineral oil is permissible) should be emphasized. Tell the patient that pain is felt only when it passes the threshold of pain consciousness; under certain conditions, the threshold is lowered and *disagreeable* sensations may be considered painful.

# Amino Acids in Dietary Insufficiency

*By*
I. S. KLIEGER, B.S., M.D., New York, N.Y.

THE purpose of this investigation is to study the amino acid content of the average diet and review its adequacy.

A sufficient amino acid intake is of utmost importance for normal physiologic metabolism and general wellbeing. This question is of added importance today, when strict reducing diets, vegetable, and other "fad" diets are so prevalent.

from those in the books of Sherman[1] and of Bodansky.[2]

A study of this chart shows that a number of the proteins occurring in foods are deficient in one or more of the essential amino acids. For example, diets which consist mostly of milk are insufficient for maintenance and growth, since cystine, which cannot be synthesized by the body, is entirely lack-

TABLE I

*Percentages of Amino Acids from Hydrolysis of Various Proteins*

| AMINO ACID | CASEIN | GELATIN | GLIADIN (Wheat) | ZEIN (Corn) | PHASEOLIN (Bean) | VICILIN (Cowpea) | LEGUMIN (Pea) | VICILIN (Pea) | OVALBUMIN (Egg) | HORDEIN (Barley) | ARACHIN (Peanuts) | AMANDIN (Almonds) | HALIBUT | CHICKEN | BEEF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Glycocoll | 0.45 | 25.5 | 0.00 | 0.00 | 0.55 | 0.00 | 0.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.51 | 0.00 | 0.68 | 2.06 |
| Alanine | 1.85 | 8.7 | 2.00 | 9.79 | 1.80 | 0.97 | 2.08 | 0.50 | 2.22 | 0.43 | 4.11 | 1.40 | 0.00 | 2.28 | 3.72 |
| Valine | 7.93 | 0.00 | 3.34 | 1.88 | 1.04 | 0.34 | 0.00 | 0.15 | 2.50 | 0.13 | 1.13 | 0.16 | 0.79 | 0.00 | 0.81 |
| Leucine | 9.70 | 7.1 | 6.62 | 19.55 | 9.65 | 7.82 | 8.00 | 9.38 | 10.71 | 5.67 | 3.88 | 4.45 | 10.33 | 11.19 | 11.65 |
| Proline | 7.63 | 9.5 | 13.22 | 9.04 | 2.77 | 5.25 | 3.22 | 4.06 | 3.56 | 13.73 | 1.37 | 2.44 | 3.17 | 4.74 | 5.82 |
| Hydroxyproline | 0.23 | 14.1 | ? | ? | | | | | | | | | | | |
| Threonine | | | | | | | | | | | | | | | |
| Phenylalanine | 3.88 | 1.4 | 2.35 | 6.55 | 3.25 | 5.27 | 3.75 | 3.82 | 5.07 | 5.03 | 2.60 | 2.53 | 3.04 | 3.53 | 3.15 |
| Glutamic | 21.77 | 5.8 | 43.66 | 26.17 | 14.54 | 16.89 | 16.97 | 21.34 | 9.10 | 43.20 | 16.69 | 23.14 | 10.13 | 16.48 | 15.49 |
| Hydroxyglutamic | 10.50 | 0.00 | 2.4 | ? | ? | ? | ? | ? | ? | ? | ? | ? | | | |
| Aspartic | 4.1 | 3.5 | 0.58 | 1.71 | 5.24 | 3.97 | 5.30 | 5.30 | 2.20 | ? | 5.25 | 5.42 | 2.73 | 3.21 | 4.51 |
| Serine | 0.5 | 0.4 | 0.13 | 1.02 | 0.38 | 0.00 | 0.53 | 0.00 | ? | ? | 0.00 | 0.00 | | | |
| Tyrosine | 4.5 | 0.01 | 1.61 | 3.55 | 2.84 | 2.26 | 1.55 | 2.38 | 1.77 | 1.67 | 5.50 | 1.12 | 2.39 | 2.16 | 2.20 |
| Cystine | ? | ? | 0.45 | ? | ? | ? | ? | ? | ? | 1.00 | 0.85 | 0.00 | | | |
| Histidine | 2.5 | 0.9 | 1.49 | 0.82 | 2.62 | 3.08 | 1.69 | 2.17 | 1.71 | 1.28 | 1.88 | 1.58 | 2.55 | 2.47 | 1.76 |
| Arginine | 3.81 | 8.2 | 2.91 | 1.55 | 4.87 | 7.20 | 11.71 | 8.91 | 4.91 | 2.16 | 13.51 | 11.85 | 6.34 | 6.50 | 7.47 |
| Lysine | 7.62 | 5.9 | 0.63 | 0.00 | 4.58 | 4.28 | 4.98 | 5.40 | 3.76 | 1.00 | 4.98 | 0.70 | 7.45 | 7.24 | 7.59 |
| Tryptophane | 1.50 | 0.00 | 1.00 | 0.00 | Pres. | Pres. | Pres. | Pres. | 1.11 | Pres. | Pres. | Pres. | Pres. | Pres. | Pres. |

The known amino acids may be classified as:

| *A. Essential* | *B. Non-Essential* |
|---|---|
| 1.—Lysine | 1.—Glycine |
| 2.—Tryptophane | 2.—Alanine |
| 3.—Histidine | 3.—Serine |
| 4.—Phenylalanine | 4.—Norleucine |
| 5.—Leucine | 5.—Aspartic Acid |
| 6.—Isoleucine | 6.—Hydroxyglutamic Acid |
| 7.—Threonine | 7.—Proline |
| 8.—Methionine | 8.—Hydroxyproline |
| 9.—Valine | 9.—Citrulline |
| 10.—Arginine | 10.—Tyrosine |
| | 11.—Glutamic Acid |
| | 12.—Cystine |

Amino acids that cannot be synthesized by the body are tyrosine, tryptophane, lysine, cystine, histidine, arginine, and glutamic acid. Maintenance and growth do not occur in the absence of the essential amino acids. Bodansky states that deficiency in even one of the amino acids that are essential for tissue construction limits the value of a protein to the animal body. I have compiled the accompanying composite chart (see Table I)

ing; while gelatin, although rich in glycine (an amino acid that may be synthesized by the body), does not contain tryptophane and valine (essential amino acids), nor tyrosine and hydroxyglutamic acid, which are non-essential. Tyrosine and tryptophane cannot be synthesized by the body.

A careful study of the various vegetable proteins shows them to be deficient or wholly lacking in various essential amino acids, and in glycocoll, whose action in muscular activity is so well proved that further comment is unnecessary. Ovalbumin of egg also is lacking in several amino acids. The amino acids in fish and meat measure up very favorably with the requirements for normal maintenance and growth.

## Clinical Studies

Thirty (30) cases, in children and adults, were selected from both my own private practice and an out-patient hospital department. These cases were in individuals on limited diets, children suffering from anorexia for which no reason could be ascribed, and patients suffering from malnutrition due to wasting or debilitating diseases. A com-

plete record was kept on all of the cases, and in most instances the patients had been under my observation for from three to five years prior to the time I administered a mixture of amino acids,* containing all the essential ones in sufficient quantities. Although the rationale of this treatment is theoretically recognized, the progress of these patients was critically watched from an objective point of view.

I selected 20 children who were at least from five to twenty pounds underweight. These cases had been studied previously for several years under recognized forms of treatment for increasing body weight, such as cod-liver oil, vitamins, various strychnine and iron tonics, etc., and a comparison of the results with those obtained with the mixture of amino acids is very striking.

Ten (10) of the children showed a definite gain in weight and appetite. The results in the other 10 cases, with regard to weight increase, were negligible. Of 10 adults selected, 8 showed a substantial gain in weight, one patient gaining as much as fourteen pounds in five weeks.

### Case Histories

Brief summaries of several typical cases are given below:

*Case 1.*—C. S.; female; age, 11 years; weight, 59 pounds, complained of anorexia since Sept. 14, 1934, in spite of treatment with cod-liver oil, various iron and strychnine tonics, vitamins, etc.

In 1939 the mixture of amino acids was added to her diet, and she showed a gain of 8 pounds over a period of several months, in contrast to an average gain of only 4 pounds a year on the previous method of treatment.

*Case 2.*—H. C.; female; age, 10 years; weight, 64 pounds, complained of anorexia. From the year 1935 to 1939 she gained an average of 5 pounds a year.

In 1939, a mixture of amino acids was added to her diet, and in the following ten months she showed a gain of 9 pounds in weight.

*Case 3.*—V. T.; female; age, 12 years; weight, 100½ pounds, showed a positive von Pirquet test; hemoglobin, 81 percent; x-ray studies of the chest, negative.

From April to July, 1939, she was given the amino acids mixture, and no gain in weight was observed.

*Case 4.*—M. B.; female; age, 11 years; weight, 78 pounds, showed a positive von Pirquet test; hemoglobin, 65 percent; x-ray studies of the chest, negative; very poor appetite. For six months prior to April, 1939, she had showed no gain in weight.

At this time she was placed on the mixture of amino acids, and in six weeks gained 1¼ pounds. In addition, there was a marked improvement in her appetite.

*Case 5.*—A. D.; male; age, 36 years; weight, 149 pounds, had not gained any weight for at least five years.

In six months, on the mixture of amino acids, his weight increased to 155 pounds.

*Case 6.*—E. B.; female; age, 26 years; weight, 108 pounds, was a post-operative patient. In seven weeks, on the mixture of amino acids, her weight increased to 112¼ pounds.

*Case 7.*—A. N.; male; age, 54 years; weight, 129 pounds, was a cardiac patient on a very limited diet. After six weeks on the mixture of amino acids, his weight increased to 135 pounds. In the three previous years this patient had shown no gain in weight.

### Discussion and Conclusion

The theory in favor of the use of a mixture of amino acids to supplement the average diet, as well as the reducing diet, is well supported by the clinical results. Such subjective reports as "feeling better," "more pep," etc., were completely disregarded. It is encouraging that a definite increase in weight, as well as a distinct improvement in appetite, was obtained in 50 percent of the children. The results achieved in adults were even more satisfactory.

Ivy and Javois[4] state that amino acids cause a stimulation in gastric secretion. Beta alanine, glycine, and cystine hydrochloride showed definite and strong stimulation. Alpha alanine, tyrosine, leucine, phenylalanine, norleucine, arginine, tryptophane, and aspartic acid showed fair stimulation.

Many reducing diets, vegetable, or other "fad" diets, are insufficient to sustain normal body balance. In reducing the number of calories in one's diet, it is necessary that the *quality* of the diet should not be impaired; that is to say, the absence of any of the essential substances may cause serious functional and nervous disturbances. Therefore, it is fair to assume that, by supplementing the diet with a mixture of amino acids, this danger will be minimized.

The question arises, why is it that certain individuals fail to gain weight on what is generally recognized as an adequate diet, such as one containing mixed proteins, essential vitamins, carbohydrates, fats, etc.? Perhaps the answer lies in the fact that, in the process of digestion in these individuals, the rate of action is such that the bacterial flora present in the intestines may produce such changes in the amino acids before they are set free, that they no longer are serviceable for the body's requirements.

In cardiac and nephritic patients, the administration of amino acids, in their immediately assimilable form, makes them an excellent dietary accessory.

The oral administration of amino acids has been discussed here. Their use intravenously, as studied by Ravdin and his collaborators[5]; their action in allergy; the action of aspartic acid as an anticoagulant; and many more as yet undreamed of uses, opens a great field for investigation.

The use of a mixture of amino acids, as a supplementary feeding, has been very encouraging in this preliminary work and further investigation is indicated in this new and interesting field.

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325 East 79th Street.

*The mixture of amino acids used in this study is known as *Aminoids*, and was kindly supplied by the manufacturers, The Arlington Chemical Co.

# Hyperinsulinism and "Daemoniac Possession"

## (A Case Report)

*By*

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THE following case report is presented because of the extraordinary symptoms that manifested themselves.

A white male, 60 years of age, came under my observation in 1933 and gave the following history and findings:

He was a descendant of poor and uneducated parents and the same characteristics were present in his offspring, due to environment and example. His ascendants and descendants were without a history of nervous or mental diseases. Poverty forced him to quit school at an early age (the fifth grade) in order to help with the farm work. At about twelve years of age he became ill with an attack of unconsciousness which, as far as physicians were able to determine at the time, was without cause. During this time he preached sermons, prayed, and sang hymns day and night for two months, except when under the influence of narcotics. This very unnatural ability to preach, together with his marked familiarity with the Bible while unconscious, caused the religious element to think that he was inspired and that the Holy Ghost was using him as a mouth-piece.

Shortly after the cessation of the original attack he was formally ordained by a church as a minister. This was done without his consent, as he was not of a religious nature and had gone to religious services only occasionally, and then merely "to be with the young people." He had seen no visions; had heard no voices; did not feel called to the ministry; in fact, he considered the whole episode an affliction rather than a visitation of the Holy Spirit.

After the original episode, these sermons would be delivered, during periods of unconsciousness, at irregular intervals, but gradually increased in number until from 25 to 30 sermons per month were delivered ordinarily. With the passing of time, he became known as the "tree climbing preacher," because of his uncanny ability to climb trees and stand in a rigid position on the limb of a tree and preach one or two and, occasionally, three sermons, with a song or prayer service interspersed, before the unconscious attack would disappear. At times, where it was possible, he would climb to the ridge of a house and deliver his sermons therefrom. In this connection, it is of interest to note that, during the climbing episodes, which were repeated for years, he never fell from his lofty pulpit, even though he was unconscious for considerable lengths of time.

Naturally, many laymen and some physicians thought that the unconscious attacks were faked, even though he did not require an audience for these episodes, as the attacks would occur with or without an audience, by day or by night, in field or forest or city. On many occasions he would be left alone to go his way unmolested; frequently he would be thrown into jail for "disturbing the peace"; and occasionally he would recover in a hospital, where he had received several gratuitous attempts at the surgical correction of the condition.

These episodes would give from ¼ to ½ minute warning by causing "a freezing column of water to go up the marrow of the backbone, and when it reaches the base of the brain it explodes and sends a shower of icicles throughout the brain, and then I know nothing." Immediately after the "explosion," consciousness departed; he became rigid; immovable; statue-like; staring directly upward and rapidly opening and closing the eyelids; and had a short paroxysm of a brassy, rasping, almost blood-curdling and never-to-be-forgotten cough. The Scripture text for the sermon and its location in the Bible would be quoted verbatim, and he would proceed in an orderly, intelligent manner to build up the sermon to its climax and carry it to its logical conclusion.

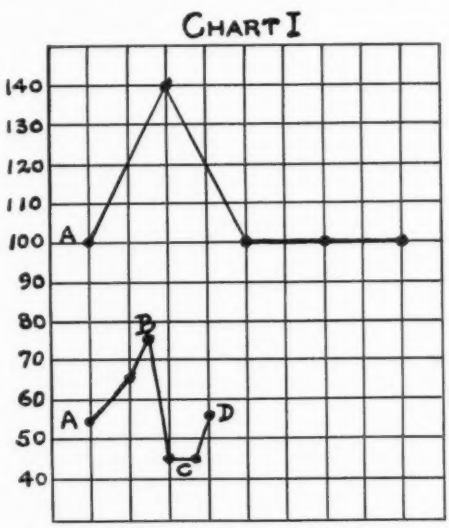
During these unconscious attacks he had, apparently, free access to the Bible, as all references and quotations were correct. Orthodox ministers frequently talked with him and found that he had practically no knowledge of the Bible when in possession of his normal mental faculties. His references to science, classical literature, and modern and ancient history were appropriate and correct. The comparisons, illustrations, and descriptions were apt, timely, and impressive. All told, most of the sermons of this uneducated, untrained, illiterate, ill-fed, ill-kept vagabond were easily equal, and frequently superior, to those of the highly educated and thoroughly trained minister. Some sermons, however, were not up to this standard and more properly fitted the man, being of the illiterate, uneducated, inferior type. During these episodes, his rigidity and staring expression remained; the pulse became somewhat slower; the blood pressure remained normal; insensibility to pain existed; and the conjunctival reflex disappeared.

Immediately upon the conclusion of the sermon, the terrifying cough would return for a moment, to be followed by a marked increase in the rate of respiration (to 80 to 90 per minute) for perhaps one or two minutes, after which he promptly regained consciousness to ask some bystander "Did I say anything out of the way?" (which, incidentally, he never did). His physical weakness would be extreme and cause him to stagger and fall while attempting to leave the scene of his "humiliation," and this frequently resulted in his arrest, by unknowing policemen, who charged him with being "drunk and down."

### Clinical Study

Upon beginning a study of the various changes that occurred in this patient immediately preceding, during, and immediately following these attacks, I was impressed by the frequency of the

attacks (an average of from 25 to 30 each month); by the marked variations in the length of the attacks (some were as short as fifteen minutes; some as long as one hour; occasionally a sermon, followed by a song or prayer service, and this, perhaps, followed by another rather long sermon before consciousness returned) and by the fact that the one-hour sermons were as perfect as those of only fifteen minutes' duration. Apparently the patient subconsciously knew his time limit, so to speak, and made his plans accordingly, as no conclusions were made except in an orderly, logical manner and never with a hasty, abrupt, premature termination of the sermon; and consciousness always returned within from 1 to 1½ minutes after the close of the sermon.




A normal dextrose-tolerance curve (above), compared with that of this patient. Each square, transversely, represents a lapse of 30 minutes. All readings (shown at the left) of concentrations of dextrose are expressed in milligrams per 100 cc. of blood.

A.—*Fasting level*, just before administering 100 grams of dextrose.

B.—Point of highest dextrose concentration in this patient (25 mg. below the normal fasting level).

C.—Period of 25 minutes, during which the patient was unconscious and preached a sermon.

D.—Consciousness returned.

Over a period of years this man had been given, while conscious and unconscious, "the best that medicine afforded," such as spinal punctures too numerous to mention and a "skull full of holes," which resulted from several cerebral decompressions. As he still had faith in the medical profession and hope for recovery, it was thought that a study of "the fuel supply"[1] of his brain would prove of interest, and perhaps of value.

### Blood Sugar Studies

As has been brought out by Himwich[2] and by Powell *et al*,[3] the fuel of the brain is the dextrose (blood sugar) present in the blood stream. This dextrose supplies the brain with the energy required for its work, which comprises such conscious mental processes as thinking, recall, memory, concentration, reason, judgment, etc. The quantity of fuel available may be determined by making a blood sugar determination or, preferably, a complete study, including a dextrose tolerance test. (See Chart I).

One will readily see that the fuel supply of this man's "mental lamp" was at a low ebb—in fact, almost exhausted—and that the mental brightness (that is, the conscious work output of his brain) would necessarily be dim. One should bear in mind that the brain was designed to function with a fuel supply of from 90 to 110 milligrams of dextrose per 100 cc. of blood constantly available, and one should not expect 100 units of mental work to be done if only 50 or 60 units of fuel are available. Furthermore, when the supply is exhausted, one should expect mental work to cease; the mental lamp to be extinguished; consciousness to disappear and unconsciousness to appear.

The first effort to study the fuel supply of this man's brain resulted in a sermon of one hour's duration, delivered, unconsciously, only one hour after he had taken 100 grams of dextrose. A second attempt resulted in a similar episode of twenty-five minutes' duration, only 55 minutes after taking the dextrose. Unconsciousness, with its accompanying sermon, could thereafter be produced on schedule by the administration of a quickly-absorbable carbohydrate or by the administration of five units of insulin. Numerous estimations revealed only 55 units of fuel (55 milligrams of dextrose) per 100 cc. of blood while the man was fasting; a maximum concentration of 75 milligrams thirty minutes after taking dextrose; and a drop to 45 milligrams within the following thirty minutes. When this marked scarcity of blood dextrose occurred, consciousness was invariably lost and the sermons unfailingly came forth unhindered.

The administration of dextrose or epinephrin during one of the unconscious periods was considered, but was never attempted. On one or two occasions when this was contemplated, I was prevented by interested members of the audience, who did not want the sermon terminated. On one particular occasion I had the stage set (without the victim's knowledge) to have a stenographer take his sermon, as it was unconsciously delivered. She began her notes, but promptly "became so weak all over" that she gave up the job. Incidentally, I had planned to stop this sermon, but was prevented by my neighboring dentist and others, who were well versed in "high up" Masonry. Their opinion was that the sermon pertained to "symbolic Masonry," as they had never heard it presented before, and they desired to hear it completed.

In the meantime, the patient had concluded that I could easily produce these "spells" with my "sugar" and "shots" (insulin), and he eventually became rather reluctant to come to the office. I discussed with him the possibility of collecting a group of his sermons, by means of shorthand, dictaphones, etc., and selling them to the "religious group." He would not consent, as he did not want to capitalize on his "affliction."

### Subsequent History

For two months I kept him on a moderately high-fat and similarly low-carbohydrate diet, with feedings every two or three hours. During this time he failed to preach a single sermon, where formerly and for years he had averaged from 25 to 30 a month. After these two months he "went on his own" and ate as correctly as he could, and

my last record states that, for 3 or 4 months, he averaged 3 or 4 sermons a month.

Unfortunately he became so shunned, avoided, and destitute that he was forced to become a "river rat" and live in a shanty boat. Several months later, he was found floating down the river, drowned. It is supposed that, when an excess of insulin burned the sugar to abnormally low levels, he became unconscious, fell into the river, and shortly "joined that innumerable caravan."

The origin of this man's periods of unconsciousness was satisfactorily explained, but the source of his sermons is not so easily accounted for. Whether the sermons had been heard by the patient at various times in his past, were sufficiently impressive to be stored in the unconscious—that hypothetical storehouse of the brain—and emerged therefrom when the inhibition of the conscious was removed; or whether their origin was even more mysterious, of some such nature as daemoniac possession (the use of this man's physical organs, while the vital *something* that made him a human individual was absent in unconsciousness, as instruments of expression for some entirely different individual, who was ordinarily living in a disembodied state, as is explained by the occultists), must be left for the reader's philosophical meditations.

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# Hazards in the Use of "Reducing Cures"

## (Dinitrophenol)

*By*

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ONE of the newer types of preventable cataract that has already caused considerable embarrassment to some members of the profession is that caused by dinitrophenol—one of the newer "reducing cures." Although it is capable of producing many serious changes in different organs of the body, it is because of its profound effects upon the eyes that recent attention has been attracted to this drug. A number of states have already passed laws and regulations controlling its indiscriminate sale and use, so that, more and more, the deleterious effects produced by it are becoming the responsibility of those who prescribe it.

Although it is true that the drug has been included in about two dozen patent medicines sold in drug and department stores for reducing body weight, it is still being prescribed, in its pure chemical form, by many physicians. In fact, most of the cases of dinitrophenol cataracts I have seen were patients who took the medicine under the direction of a physician. However, it should be noted that the drug has not received the approval of the Council on Pharmacy and Chemistry of the A.M.A., nor is it listed in the "United States Pharmacopeia."

On the other hand, the American public is apparently unaware of the utter lack of protection afforded by our present food and drug laws. With an unconcern that repeatedly reaches tragic proportions, the average American citizen apathetically permits his very life to be placed in constant jeopardy by blind faith and unwarranted confidence in his vague and exalted conceptions of modern scientific attainment, which he mistakenly assumes to be the basis for the laws which protect him. Certainly it is reasonable to expect that food and drug laws should have some scientific basis, but unfortunately they usually do not. The old Roman commercial principle, "*caveat emptor*," still prevails. Modern science has not yet conquered ignorance and greed. It has no control whatever over the personal, selfish, and biased commercial activities of certain human parasites who grow fat upon the infirmities, frailties, and credulities of unfortunate and ailing men and women by blatantly advertising miracles of quasi-scientific discovery, but entirely ignoring the dangers that would be readily revealed by real scientific methods of investigation.

It was due to this same lack of protection that citizens of the southwest, in 1930, were blinded, paralyzed, and killed by imbibing concoctions of Jamaica ginger. And less than a year ago more than 90 persons met death by taking a new and untried "Elixir."

When dinitrophenol was introduced as an "antifat," it was not a new and unknown chemical compound. As far back as 1885, studies on the nitrophenols had revealed its pharmacologic and toxic actions on animals. Interest was revived during the World War, when the many and varied poisoning effects of the nitrophenols on munition workers in France were extensively studied and recorded in scientific literature.

In 1933 dinitrophenol was first introduced to the medical profession as a metabolic stimulant. About a year after its introduction, reports began to appear in medical literature on the development of cataracts in individuals who had taken the drug. Reports of other toxic manifestations appeared con-

currently and ranged all the way from mild skin rashes to terrible and fatal forms of poisoning, for which there are no known antidotes.

### Pharmacology

Dinitrophenol is a yellow, crystalline powder, readily soluble in most fluids. In solution it rapidly undergoes decomposition. It may be dispensed in capsules or in tablet form. In some cases it is prescribed in its pure form and in others it is mixed with other drugs.

The main pharmacologic action of dinitrophenol is an increase in tissue metabolism. In moderate doses there is an increase in the basal metabolic rate of 20 to 30 percent within the first hour after ingestion. As the drug is continued in the same doses, there is a slight additional rise until a maximum increase of approximately 40 percent is reached on the fourth day. When the medication is discontinued, the basal metabolic rate returns to the initial level in from three to fourteen days. While taking the drug the patient experiences a slight flushing of the skin, a feeling of warmth, an increased tendency to perspire, and an increased rate or depth of respiration.

The increased body metabolism involves chiefly the utilization of fat, and has practically no effect on carbohydrates or proteins. The fat is broken down completely and in accordance with our physiologic conceptions of normal fat metabolism. There is no increase in fatty-acid concentration in the blood and no ketone bodies are found in the urine. In this particular respect dinitrophenol is certainly an excellent drug, for it speeds up metabolism wholly at the expense of body fat, and yet does not create acidosis. It is apparently an ideal drug for the reduction of body weight, and were it not for its various toxic effects it would undoubtedly be a great boon in the control of obesity engendered by our modern soft and sedentary life.

During the ingestion of dinitrophenol, the increased tissue metabolism requires a marked increase in oxygen consumption. Therapeutic doses produce slight changes in the composition of the blood plasma. There is an increase in chlorides, a decrease in bicarbonate concentration, but practically no change whatever in hydrogen concentration, calcium, phosphorous, or nitrogen.

Unlike thyroxin or thyroid gland extract, which is also a metabolic stimulant, dinitrophenol does not accelerate the metamorphosis of tadpoles. This biologic reaction affecting the developmental processes, which is so characteristic of the thyroid gland, is entirely lacking in the synthetic chemical, dinitrophenol.

### Toxicity

For a drug manifesting such remarkably selective reactions on fat metabolism as does dinitrophenol, its toxic effects come as a distinct disappointment. Dramatically, the drug takes on a "Dr. Jekyl-Mr. Hyde" aspect, producing remarkably beneficial results in some cases of obesity, and widespread destruction in the organs of others less fortunate in their individual reactions to it.

It is this wide range of variation in the individual reaction to dinitrophenol that makes its effects so unpredictable, and renders a reliable determination of a moderate or average therapeutic dose an impossibility. Actual reports show that amounts of dinitrophenol, in grams per unit of body weight, which produce the desired reduction of body weight in one individual, may cause widespread and serious toxic effects in another. These facts were recognized soon after the chemical was introduced as a therapeutic agent. It was hoped, however, that some method could be discovered for determining just how each individual would react to dinitrophenol before it was prescribed for internal use. Various methods of determining the sensitivity of an individual by skin tests were tried, but none proved satisfactory. And even today, the question of individual sensitivity to the drug remains entirely unsettled. *Every individual who takes dinitrophenol is, therefore, subjected to definite risks of toxicity. And the chances, based on actual statistics, of suffering from such a toxic reaction are approximately one in four, or 25 percent.*

Soon after ingestion and as soon as it enters into solution in the body fluids, dinitrophenol undergoes chemical decomposition into reduction derivatives of varying complexities. One of these derivatives, amino-2 nitro-4 phenol, appears in large quantities in the urine of individuals suffering from dinitrophenol poisoning. The detection of this particular reduction product is, therefore, used as the basis of a urinary test for dinitrophenol poisoning. It is known as the *Derrien test*, but it is not infallible and cases of dinitrophenol poisoning have occurred in which the test was negative. It is, therefore, of limited value in a positive way; but when negative, it is not to be taken as conclusive evidence that the individual is not suffering from dinitrophenol poisoning.

Careful study has failed to reveal any impairment of liver or heart function by dinitrophenol in the majority of cases, when taken in moderate therapeutic doses.

When the therapeutic dose is exceeded, the first clinical effects noted are those of increased heat production. The individual becomes uncomfortably warm, perspires freely, and experiences a sensation of suffocation. Drenching night sweats are common among those who develop toxic reactions. The extent of the elevation of body temperature serves as a good clinical index of the degree of toxicity. *In general, the oral temperature should not be permitted to exceed 99.2° F. When this temperature is exceeded the dangers of a toxic reaction are markedly increased.*

One of the outstanding peculiarities of dinitrophenol poisoning is the variety of different initial toxic reactions that may occur. In this way it differs materially from such poisons as arsenic, mercury, lead, strychnine, and cyanide, all of which present fairly constant and unvarying clinical pictures, each producing the same group of symptoms in every individual poisoned by them.

Of the many toxic effects of dinitrophenol, the most frequently encountered is an eruption and itching of the skin, which occurs in more than 20 percent of individuals taking the drug. But even the character of this skin rash is inconstant. It may resemble the rash of measles, or that of smallpox or scarlet fever, or it may appear as an attack of hives. It has also been known to cause baldness. A fatal and horrible form of dermatitis exfoliativa has occurred.

Among the many other toxic manifestations of dinitrophenol are cataracts, headaches, localized pains, nervousness, liver disorders, neuritis, menstrual disorders, asthma, allergy, swellings of the hands and feet, etc.

One of the most serious general effects of dinitrophenol is the toxic effect on the blood. In this

particular aspect, it is similar to other toxic chemicals which contain the benzene ring in their molecular structures. The result of this type of poisoning is one of the most dreaded diseases that has appeared in modern times—*agranulocytic angina.* As a result of the toxic effect of the benzene ring, the polymorphonuclear leukocytes disappear from the circulating blood, leaving the body with no defense mechanism whatever against infection. At the same time the throat becomes ulcerated, or even gangrenous, and another horrible form of death ensues. Any patient who is given any therapeutic agent containing the benzene ring in a loose chemical structure, should have careful and frequently repeated red, white, and differential blood-cell counts.

The excessive sweating produced by the accelerated metabolic rate also predisposes the individual taking dinitrophenol to colds, sinusitis, bronchitis, laryngitis, tonsillitis, and otitis media. All of these conditions occur more frequently in those taking this drug than in those who do not.

If dinitrophenol is taken at intervals of 24 hours or less, there is a rapid development of tolerance, so that the dose must be progressively increased in order to induce a steady and continuous loss of weight. This tolerance is temporary and is completely lost within two weeks after the drug is discontinued. When its administration is later resumed, it must be in much smaller doses than when it was continued. If the drug is taken at longer intervals (three to four days), no tolerance at all develops.

The serious forms of acute dinitrophenol poisoning are exceedingly dangerous, because there is no known specific antidote. Treatment consists of supporting the life and vital forces of the patient and maintaining his strength, in the hope that the spark of life will outlast the destructive effects of the poisonous drug. In such cases, attempts are made to overcome the malignant leukopenia by using preparations of pentnucleotide, but unfortunately this has not yet proved to be a specific cure.

### Ocular Changes

Although the various toxic effects just discussed are of considerable importance, the average practitioner is chiefly interested in those changes which may occur when the drug is used in therapeutic doses. Aside from the possible specific toxic effects upon the crystalline lenses of the eyes, the diverse initial toxic reactions, with therapeutic doses, are transient and relatively unimportant.

It is estimated that only 1 percent of all individuals who take dinitrophenol eventually develop cataracts. However, such statistics or estimates are quite unreliable, because dinitrophenol has been mixed with a number of nostrums and has been dispensed under many trade names which, in many cases, make its real nature unrecognizable. The value of such statistics is further depreciated by the wide variance in the periods of time between the ingestion of the reducing cure and the appearance of the lens opacity. Helminen reports five cases in which the cataracts developed from seven to fourteen months after conclusion of the reducing cure. I saw one case in which the visual acuity declined from normal to mere light perception in two and one-half months after taking a reducing medicine; and in another case, useful vision was not lost until two years after the ingestion of dinitrophenol.

Because of its widespread use and the possibility of remote effects long after it has been discontinued, it has been predicted that a marked increase in the incidence of dinitrophenol cataracts may be expected in the immediate future.

In an individual who has undergone a marked and rapid loss of weight from a reducing medicine, a sudden increase in hyperopia, or a decrease in a pre-existent myopia, associated with a recent-

Fig. 1: Cataracts and loss of convergence due to reducing medicine containing dinitrophenol.

ly developed loss of convergence, is a harbinger of loss of the transparency of that individual's crystalline lens. By some, this development of hyperopia is regarded as the result of tissue dehydration from the excessive sweating and increased metabolism which these individuals experience. Every individual I have seen suffering from reducing-cure cataracts has experienced this increased tendency to perspire while taking the medicine. Some even perspire at night during their sleep. Personally, I am not at all convinced that dehydration alone is the inciting factor in the formation of cataracts. I have seen many dehydrated patients who have not taken dinitrophenol and have never developed cataracts.

The increase in hyperopia may be very transient, and in cases where the lens changes occur rapidly it may be entirely overlooked. In one of my cases the hyperopia increased one diopter over a period of a year and a half, and then rapidly decreased by three diopters in a period of four months, as the eyes changed from hyperopia to myopia. This development of myopia is one of the secondary refractive changes that occur in these patients destined to develop cataracts. After the initial increase in hyperopia there is also a marked loss of accommodative ability and usually, at the same time, the first lens opacities become visible as a clouding in the posterior cortex.

During all these changes in the refraction, the ophthalmometer readings remain unchanged. This is of considerable significance, for it indicates that the refractive changes that occur are of lenticular origin.

After these early changes, which may occur rapidly in some cases or more slowly in others, there is usually a gradual decline in the visual acuity, paralleled by an increasing loss of transparency of the crystalline lens. Usually there is a rapid autolysis of the lens fibers. A wide splitting of the main sutures is often visible with oblique illumination in the early stages of the cataract formation; and with the slit-lamp, varying degrees of lamellar splitting are easily discernible. Vacuoles of varying size and number are usually also visible in the anterior subcapsular zone. The entire lens

shows a marked increase in thickness during this stage. Often the anterior chamber becomes very shallow, as the iris and intumescent lens encroach upon it. During this stage the intraocular tension is usually in the lower range of normal (15 to 20—Schiotz). The instillation of a mydriatic, in this stage, frequently results in a marked and rapid increase in the intraocular tension, as the drainage channels of the anterior chamber are further obstucted by the dilating iris.

Eventually the lens fibers break down and subcapsular fluid spaces, of various sizes and with ragged, irregular borders, can be made out with the bio-microscope. The fluid in these spaces and in the widened suture lines remains clear, colorless, and optically empty for some time. In an occasional case I have been able to view the fundus through the widened suture lines, when all other portions of the lens were quite opaque. Eventually, depending upon the extent of disintegration of the lens fibers, this fluid loses its transparency and becomes cloudy and finally milky in appearance.

If the cataract is permitted to remain in the eye and if no other complication develops, there is a gradual receding of the swelling in the lens. The fluid spaces gradually disappear and the lens becomes thinner and more compact. Sclerosis of the central portion usually develops more rapidly than in a normal lens in the months that follow, and the patient seldom experiences any improvement in vision.

The exact mechanism by which reducing cures act as specific tissue poisons may not be clearly understood but there can be little doubt as to the effects produced by them upon the crystalline lenses of certain individuals. To those skeptics who doubt the effects of reducing cures containing dinitrophenol on the eyes, I offer the appended list of references.

### Surgical Removal of Dinitrophenol Cataracts

My experience with reducing-cure cataracts has convinced me that the method of choice for removing them depends upon the stage of development and upon other varying circumstances attending different cases.

In the intumescent stage and when no central nucleus is discernible with the slit-lamp, the aspiration technic which I described in the *Archives of Ophthalmology* for June, 1938, gives excellent and prompt results. When the lens is compact and there is little or no excess of fluid between the fibers; or when a large nucleus is present, the Barraquer suction operation offers the finest results obtainable with any of the intracapsular technics.

### Conclusions

1.—Dinitrophenol has not been accepted as a therapeutic agent by the Council on Pharmacy and Chemistry of the American Medical Association.

2.—Because of the wide variation in individual reaction to it, the determination of an average or therapeutic dose is an impossibility.

3.—The chance of developing a toxic reaction after ingestion of dinitrophenol is 25 percent.

4.—From 1 to 10 percent of those who have taken dinitrophenol develop a characteristic type of cataract.

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## LOVE AND WORK

*To love is to create, to serve; and in order to create, we must work, with intelligence, with efficiency, and with desire.*—Morris Workman.

# Fracture of the Patella

## A New Method of Treatment

*By*
E. C. Cook, M.D., Madison, Ind.

IT is refreshing to encounter a medical article which is original and deals only with matters of which the physician-author has had personal experience. For this reason, this little article is arranged to present a new technic for treating fractures of the patella which, it is hoped, will prove interesting and useful to surgeons, especially those in general practice.

Since the days of automobiles and careless drivers, fractured patellas are more frequent than formerly, and therefore, better treatment should be devised for handling them.

With the use of an ordinary pair of 7-inch calipers, the treatment of a fractured patella has

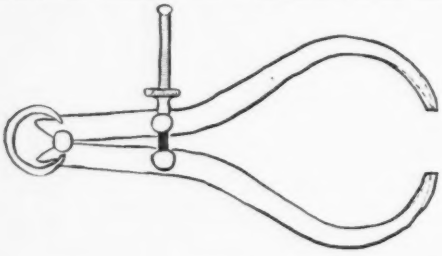

Fig. 1: Showing the 7-inch calipers with points ground very sharp.

proved simple and successful, and has resulted in good functional use of the limb. Special emphasis must be placed upon the fact that the patient, during this course of treatment, suffers no pain at any time, and therefore does not require an opiate.

Unlike some other methods of treatment, this is a closed (non-operative) reduction and fixation, carried out under a local anesthetic. There is no incision, no suturing, and no scar tissue which may result in a stiff joint.

### Technic

Procure an ordinary pair of 7-inch calipers, and file the ends to very sharp points (see Fig. 1); then, with the injured limb fully extended, the fragmented portions of the patella (Fig. 2) are accurately approximated by pushing them together with the fingers.

Introduce a local anesthetic solution at the two points where the calipers will pierce the skin, and push the calipers through the skin and firmly into each piece of the patella. When the calipers are accurately adjusted (a fluoroscope is helpful, if one is available), lock them with the screw which is provided for that purpose (see Fig. 3).

With an assistant holding the calipers, a plaster cast is applied, from the foot to well up on the thigh, thus incorporating the calipers in the cast and holding the fracture fragments closely in apposition (see Fig. 4).

The cast is to be left in place for six weeks. At that time it can be removed, and also the calipers. A posterior splint is then applied and worn until the parts are more firmly healed.

It is remarkable how comfortable the patients are during this treatment. A further pleasing result is the good action the patient has in the knee

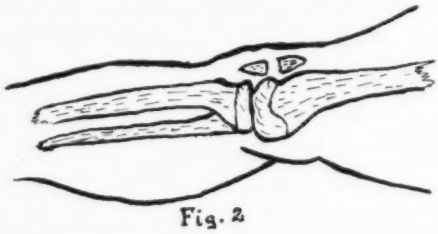

Fig. 2

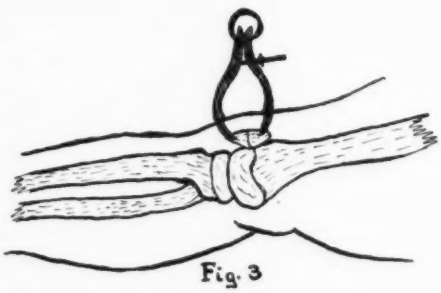

Fig. 3

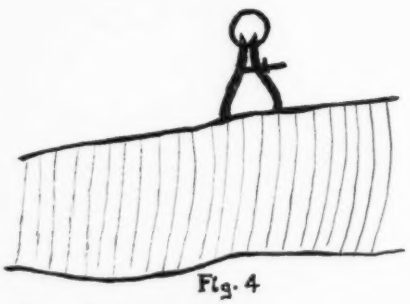

Fig. 4

Fig. 2: The fractured patella.
Fig. 3: Calipers holding the fragments of the fractured bone closely together.
Fig. 4: Plaster cast, with calipers in place.

joint following the use of this method. In the two cases I have treated, the patients have had good movement in the joint and excellent functional results.

Roentgenograms do not always show a perfect anatomic position of the fragments, but I am sure that the technic can be improved to take care of any case, by using the fluoroscope to secure better coaptation.

# A Living for the Doctor

## The Business of Medicine and the Art of Living

*Associate Editor:* Ralph L. Gorrell, B.S.M., M.D., D.N.B.

# Lebenslust

HOW many of us leap from our couches o'mornings with yodels with unbridled eagerness? If not, why not? Some of us never did, but most of us have had that experience at some time in our lives. Why not now?

In the last analysis, each man must answer these questions for himself, but there are some common factors which are worth studying, because, if we have lost the *Lebenslust*—the *joie de vivre*—something of immense worth and beauty has escaped us, whose restoration is worth sincere thought and resolute effort.

The evaporation of enthusiasm for life is *not* due merely to the passing of a certain number of years. Walt Whitman was sharp-set and eager after his hair and beard were snow-white, and a number of others (though the list is all-too-short) have retained the savor of the day, even to advanced age.

The world is, unfortunately, full of people who are so busy at making a living that they have never *learned how to live*—they have never formulated for themselves the request they would make if the Good Fairy should suddenly give them a chance to "make a wish." How can a man shout with the joy of achievement when he has no clear idea what it is that he would achieve?

Many are working merely that they may eat, feeling that they are unsuited to their jobs (or, more commonly, that their jobs are not suited to them) and taking no pride nor pleasure in their performance. All jobs are important and all are worthy; and no matter what a man is doing, if he does it with *energy, intelligence, sincerity,* and *joy* —*plays it,* as he would play a game—he will get a "kick" out of it.

Thousands of people are frittering away their fund of time and energy in senseless and wholly unprofitable ways, as though these priceless treasures were inexhaustible. If we face an expenditure of cash, we stop to consider whether we can afford it and whether or not the thing we would buy is worth the price we must pay for it. How is it with expenditures of time and strength? Do we give a thought to the fact that our supply of these things is strictly limited, or ponder over whether the pleasure we would buy with them will give a fair return for its cost?

The financial bankrupt is not likely to be a joyous person; but he may be able to "come back." The man who has squandered his hours and his powers rarely or never does so.

Too few have really satisfying outlets for the energy which is not absorbed in earning the daily bread. He who has *two* absorbing hobbies—one physical, the other intellectual—is a fortunate man, and has an effective prophylactic against staleness and *ennui* in his later years.

"The world is so full of a number of things
"That I think we should all be as happy as
Kings!"

And then, most of us take ourselves so distressingly seriously! We may be vastly important to ourselves and to a few intimates, for the time being, but in the long run, how much do we really matter to anyone, except to our own souls? Self-development, through well-digested experience—*real living*—is the true purpose of human life. The rest is froth on the beer.

If we are not finding life a zestful adventure, it is not because the joy and the glory are not in it, but because our outlook upon the world is strabismic and we lack a sense of humor—which means a perception of the relative proportions of things. Hear John Masefield:

"Would that the passionate moods on which
we ride
Might kindle thus to oneness with the will
Would we might see the end to which we
stride,
And feel not *strain* in struggle, only *thrill!*"

G. B. L.

## Cost of Treating Dispensary Patients

EXPENSES for maintaining a diabetic clinic in the Beekman Street Hospital, New York City, amount to $2,217.38 for 55 patients who made 500 visitis or *$4.43 per visit.** Only 16 of these patients make or have made their own living. The others are furnished service and supplies with tax money.

This group of middle-aged diabetic patients (average blood sugar 209 mg. percent) should be comparatively easy to manage, yet the total cost is above what it would cost the physician to take care of such patients in his own office, even in the cities where fees are higher. In small-town practices, where the usual office charge is one or two dollars, the physician could profitably carry on at half of these rates.

Proponents of such clinics argue, and rightly so, that many physicians do not like or do not know how to manage diabetic patients; but the modern methods of treating the routine cases may be learned by any doctor who takes the trouble to purchase one of the new books and study it for a few hours. If he finds the work interesting, he can determine his patient's blood-sugar level by the purchase of a comparatively simple colorimeter (total cost, thirty-five dollars, including chemicals) and be able to treat practically every case except the occasional polyglandular dysfunction, which should be referred for expert diagnosis.

R. L. G.

*These figures are furnished in the *New York State J. Med.* of September 15, 1939.

# ★ *Notes and Abstracts* ★

## Medicine and Political Sophistry

THIS is the day of the superficial survey, the short-cut solution, the infallible formula, the half-truth, the wisecrack rejoinder, the pat analogy, the argument *ad hominem, ad nauseam.* Any counterfeit reasoning passes as sound currency of thought, if only it has some ring of humanitarian theory. In Washington and elsewhere, young intellectuals, speaking the dialectic of a long-discredited German fanatic, rebuke the "reactionary" ideas of their betters.

In this country, they will tell you, we have all the resources and the scientific knowledge necessary to abolish pain and death from the world. They need only to be used. But, according to this silly syllogism, a dark conspiracy by entrenched "interests" prevents the full employment of life-saving science.

Inevitable, then, that there should be hauled out the most ubiquitous, most infallible of all formulas in this mad decade: Let political agencies take over the distribution of the boons of medical science. With the Government's unlimited power to tax, death can be routed.

But men of science object that politics has usually been an enemy of science; that there is an irreconcilable conflict between the method of science and the method of politics.

Then observe the argument *ad hominem:* "Those who oppose our great-hearted plans belong to the medical trust. Believe them not."

To clinch the point, there is adduced the argument by pat analogy: "Do you favor the public school system, Doctor? Do you think our schools are any good? Then why do you oppose government running a health system?"

When the "social" cause is backed into a corner there is the old reliable refutation by constructive alternative:

"You don't agree with our Great Plan; then what do you suggest in its place? Just how would you improve it?"

Too often conservatives have been subdued by one or another of these polemical tricks. Doctors, like business men, are not trained in the art of making the worse cause appear the better. Nevertheless, they are making a courageous resistance to the march of collectivism, a fight that deserves the support of all believers in American, as opposed to imported European, institutions.

The doctor's job is to alleviate misery while others declaim about it. He has learned that the healer cannot indulge in emotionalism.

As a man of science he has learned to be patient. Evolution marches slowly. Perfection always eludes the grasp of mortals, because some improvement must be left to future generations. Looking back on the furrow of the past, he sees that the profession of life-saving has come a long way. It has far to go yet, but Americans should be willing to leave his trained hand on the plow and reject the clamor to substitute, in the place of control, the man of mere words.—*Nation's Business.*

[This is the introduction to a remarkably detailed, instructive, and beautifully printed 24-page (8½ x 12 inch) supplement to *Nation's Business,* which should be in the hands of every voter in this country, for *his own* good, and for the good of the medical profession. Every physician should be distributing them among his patients, or at least should have three or four copies, to be loaned and returned for further circulation. The price of single copies is 10 cents; by the hundred, $6; by the thousand, $50. Send for *your* copies to the Chamber of Commerce of the United States, Washington, D.C.—ED.]

## True Gonorrhea

THE word, gonorrhea, is now universally (but quite inaccurately, from an etymologic standpoint) applied to a venereal disease, which would be better designated by the vulgar word, "clap," since

the more technical term comes from two Greek words meaning "a flow of semen."

In "The Modern Practice of Physic," by Robert Thomas, M.D., published in New York in 1817, we find this word used in its true and proper sense, in describing nocturnal seminal emissions as "*Gonorrhea Dormientium.*"

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Kobel Feature Photos

## This Physician Was "Catching"

PHYSICIANS need vacations worse than most other people, and Dr. Chad A. Van Dusen, of Ogden Center, Mich., was wise enough to take a *real* (or perhaps reel) one, where he could fish in the Gulf of Mexico. He proved that, though he was not *contagious*, he certainly was "catching."

While fishing with a *hand line* (not a rod and reel), near Quarantine Island, off the coast of Florida, Dr. Van Dusen landed a jewfish weighing 54 pounds, and felt quite proud of himself. Shortly thereafter he landed (with the help of the two other men in the boat) three others, weighing, *in the order of their capture* (believe it or not), 80, 180, and 310 pounds. Then he stopped, fearing that he might catch the one with which Jonah had such a distressing experience (it was *not* a whale, as most people seem to think) and be in some danger of repeating the Scriptural incident. As it was, he could hardly believe his own fish story, and in order to convince himself and other doubters he had this picture taken—and it is *not* a photographer's trick.

*Moral:* "Go, thou, and do likewise."

## Recognizing Constitutional Inadequacy

WHAT is greatly needed in this country is a body of clinicians who can recognize the constitutionally inadequate relatives of the insane for what they are, and who will not expect to make them over by any device yet known to science; who will save them from repeated and futile examinations and operations; and who will not get excited over a few amebic cysts, a small fibromyoma of the uterus, a small adenoma of the thyroid gland, or an appendix that points upward toward the liver or downward toward the pelvis.—WALTER C. ALVAREZ, M.D., F.A.C.P., in *M.Clin. North America*, Sept., 1934.

## Soul Healer

WORN, tense, and strained with labors for the cure
Of fleshly ills, the tired physician strives
To rest. His mind still struggles to be sure
His judgments have been best for mending lives.

Softly, a web of tender notes is made
By loving hands that keep his home hours whole.
He smiles, relaxes, sleeps. Those hands have played
The Liebestraum of Liszt, to cure his soul.

GEORGE BURT LAKE.

## Negligence and Wrong Intent

NEGLIGENCE is a breach of the legal duty to take care.—SIR JOHN SALMOND, in *Med. World* (Lond.), Mar. 1, 1940.

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Negligence and wrongful intent are two different mental states. It is usually necessary to prove the latter in criminal cases, as negligence alone is rarely a ground on which liability rests, unless it is of a gross kind. In the eye of the law, the mind of man matters not. It is only when his mind is so applied that a certain course of conduct results that the law takes cognizance of it.—J. BURNET, M.A., M.D., LL.B., in *Med. World* (Lond.), Mar. 1, 1940.

## An Unbeatable Game

CITIZENS who have appeared before government tribunals have been reminded of the old story of the gambler who was playing faro:

"This game," said a friend of the gambler, "is crooked."

"But it's the only game in town," said the gambler.

A departmental agency may be detective, prosecutor, judge, jury, and hangman. On the frontier an unbeatable hand of poker was once known as an Arkansas flush: "Four jacks and a bowie knife."—HERBERT COREY, in *Nation's Business*, June, 1939.

CLINICAL MEDICINE AND SURGERY is a very fine, clean medical journal, well edited, and its mechanical makeup—printing, etc.—is of a very high grade, far superior to many others that come to my office table.—W. E. McK., M.D., Kansas.

## The Sow's Ear

DESPITE the fact that certain chemists, a few years ago, demonstrated that a silk purse *can* be made out of a sow's ear, the indubitable fact remains that a stupid human ass cannot be transformed by a college "educashum" into an individual of intelligence and culture. It is opined that no intelligent college professor is today in any way startled by the poor spelling, crude grammar, and loose thinking of his "students."

Why are so many dolts, poorly prepared elementary "scholars," and congenitally mentally tired individuals allowed to matriculate in our colleges and universities, especially those maintained at the expense of the taxpayers?

Perhaps the reason, not the answer, resides in our false conception of democracy: viz., "One man is as good as another." That's a damnable lie! Also, while it is readily admitted by hoi polloi that every man cannot be a Joe Dimaggio or a Jack Dempsey, yet hoi polloi in general has a vague idea that any man can rate "general culture" if, at parents' or the taxpayers' expense, he can wriggle through four years of college and be crowned with a bachelor's degree. This idea of hoi polloi is carefully nurtured by a national educashumal plunderbund (comparable to the late Anti-Saloon League, of malodorous memory), state, county, and municipal politicians, and the run-of-the-mine *Homo saps* who seek "to do good" at other people's expense.

It is wondered whether Thomas Jefferson, the "Father of Democracy," and an early and foremost advocate of public education, ever visualized the sending of morons and loafers to college to waste four years rooting at football games, making dates with co-eds, and "making marks," all at the expense of the taxpayers.

Presumably, Jefferson visualized the sending of *all children* to public schools, so that they might learn reading, writing, and simple arithmetic. Certainly, it may be ventured that Jefferson had no idea of taxing poor farmers, mechanics, and unskilled laborers to the end that the upper middle-class and the wealthy might send their progeny to state universities at public expense, regardless of whether their progeny's mentality be of the nature of a sow's ear—or less.

The annual "national tax dollar" (and by that is meant a tax dollar represented by federal, state, county, and municipal taxations), gives 17 cents to education; the next highest item is 3.75 cents given to the judiciary; i.e., the law, beginning with the humble policeman, up to the judges of the Supreme Court. The 14 cents' difference represents billions of dollars wasted or, rather, offered to the great god Educashum in the form of luxurious high schools, useless State universities, and their output of blighted lives in the form of white collar misfits, who have the idea that it is beneath them to earn bread in the sweat of their brows. —*The Kalends* of the Waverly Press, Feb., 1940.

## ★ *Books* ★

### Immortality

#### Dorland

SHALL WE LIVE ON? *By* W. A. NEWMAN DORLAND. *New York: Fortuny's.* 1940. *Price,* $1.00.

THE mechanistic universe is, today, an exploded notion, with thoughtful scientists, even though they cannot accept the non-resident, anthropormorphic God of the orthodox theologians; but by no means all of them are yet ready to accept the idea of personal immortality.

In this sightly little volume, a nationally known physician, scholar, scientist, and lexicographer speaks with the voice of science, of religion, and of reason, and the answer to the question propounded in the title is, "It is not only possible, but probable."

Every physician should read this simple, scholarly, and reverent essay, and whether or not he agrees with Dr. Dorland's conclusions, he will be well repaid for the time so spent.

### Europe Before the War

#### Yeats-Brown

EUROPEAN JUNGLE. *By* F. YEATS-BROWN. *Philadelphia: Macrae Smith Co.* 1939. *Price,* $3.00.

NEVER has it been so important that every American should have a sound foundation of knowledge of the *facts* of conditions in Europe under his feet (or his head), in order that he may not be swept away by the flood of propaganda that is ingulfing us.

Major Yeats-Brown, an Englishman and a former officer of the British army, is a world-citizen who has traveled widely, observed accurately and intelligently, and written brilliantly for years (his "Lives of a Bengal Lancer" brought him fame and fortune). Here he has set down the *historical facts* and the *intimate truth* (from his personal observations) about England, France, Germany, Italy, Spain, and the Balkans; about Chamberlain, Hitler, Stalin, and Mussolini; about Communism and Fascism, in a way that carries conviction of its validity and disinterestedness.

No American, who aspires to deal *intelligently* and impartially with the present complex "Jungle" of European conditions, can afford to miss reading this timely, vigorous, clearly written, and thought-stimulating book.

### Poland

#### de Colonna

POLAND FROM THE INSIDE. *By* BERTRAM DE COLONNA. *London: Heath Cranton, Ltd.* 1939. *Price,* $1.75.

IN the midst of the barrage of "sob-stuff" propaganda regarding Poland, which is about all that people in the United States are permitted to read, by those who are using every effort to get us into the present European fracas, this book, by an *Englishman* who knows European history, and knows Poland *intimately, from the inside,* is decidedly refreshing.

Mr. de Colonna tells the story of the formation of the "New Poland," and of the way it has treated its large minorities and other countries it dared to bully, in a terse and graphic style, backing up his statements with copious historical references from English and Polish sources, which gives the work an authoritative character that cannot be laughed off by those whose selfish interests would be served by representing Poland as an inoffensive martyr.

### CULTURE AND THE PHYSICIAN

*In no profession does general culture count for so much as it does in medicine, and no man needs it more than the general practitioner.*

—SIR WILLIAM OSLER.

# The Seminar

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**(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.**

**Discussions should reach this office not later than the 5th of the month following the appearance of the problem.**

**Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, Waukegan, Ill.)**

## Problem No. 5 (Surgical)

**Presented by O. S. Wyatt, M.D., Minneapolis, Minn.**

(See CLIN. MED. & SURG., May, 1940, p. 195)

RECAPITULATION: A boy, 11 years old, had a rather typical attack of acute appendicitis and was operated upon, uneventfully. Before operation he was given 1/8 grain (8 mg.) of morphine, with 1/300 grain (0.2 mg.) of atropine. The anesthetic was nitrous oxide, followed by ether. When placed on the table, his body seemed warmer than his fever chart indicated.

During the operation he twitched and became slightly cyanotic. Both of these symptoms ceased when the administration of ether was suspended temporarily, and the pus-filled appendix was removed without any undue trouble or disturbance.

About 25 minutes after being returned to bed, the boy had a violent convulsion, with cyanosis, carpo-pedal spasm, a temperature of 108.04 F., and a pulse rate of 105. He never recovered consciousness.

*Requirements:*—Suggest the cause of death, *giving reasons.* What treatment, if any, might have saved his life?

### Discussion by Paul E. Craig, M.D., Coffeyville, Kans.

The causes of *postoperative tetany* in childhood, with resulting convulsions and death, are due to a combination of factors.

1.—Children have the ability to store very little carbohydrate in the liver, and anything which disturbs the normal carbohydrate intake, such as marked toxemias due to severe infections, may result in extensive liver damage, with the rapid appearance of ketosis.

2.—Dehydration and loss of chlorides consequent to vomiting, not only place the adolescent patient on the threshold of impending acidosis, but of alkalosis as well. Tetany due to alkalosis may be expected to begin when the carbon dioxide combining power of the blood plasma approaches 100, and when there is an associated decrease of ionized calcium in the blood.

3.—The congenital absence or hypofunction of the parathyroids may produce tetany which, at times, may prove fatal when the patient is given a general anesthetic.

The absence of free fluid in the abdominal cavity, in the presence of an acutely inflamed appendix and a hot, dry skin, point unmistakeably to dehydration, with possible acidosis and impending uremia. It is reasonable to believe that a patient with peritoneal irritation would vomit, although no mention of this fact has been made and no urinary findings reported. The hyperpyrexia in this case suggests liver failure.

The *fatal termination* was probably due to *dehydration* and *hypoglycemia*, leading to the production of an acute *acidosis-alkalosis syndrome*, with the development of uremia and hepatic failure.

*Treatment:* Pre- and postoperative treatment, in border-line acidosis and alkalosis cases, should be directed toward the restoration of the normal water, sodium chloride, and dextrose equilibrium of the body, by repeated intravenous injections of 1000 cc. of 5- or 10-percent dextrose solution. Fischer's solution should be given intravenously, if there is urinary depression, and 5 cc. of a 10-percent solution of calcium chloride may be given, also intravenously, to relax spasms. Sedatives should be administered by rectum, and the heart should be given supportive treatment.

### Discussion by A. E. McMahon, M.D., Glenwood City, Wis.

I think that several factors had a bearing on the outcome of this case. The patient was apparently somewhat septic, as indicated by the temperature of 102.4° F. Prior to operation, children often have fever which reaches higher levels in appendicitis, than do adults, but at 11 years one would think it a little unusual to find a fever thus high in appendicitis, while the appendix was still intact.

The child might also have had a spasmophilic tendency. A history of previous convulsions would lead one to determine the blood-calcium level before operation.

Dehydration and mild acidosis probably existed to some degree, and could and should be corrected *before* operation.

The twitching and cyanosis observed during operation, relieved by stopping the ether, were warnings of an impending convulsion, which was post-

poned but not prevented by stopping the anesthetic. One cannot state positively, but it is probable that the administration of a suitable dose of Evipal or Nembutal, intravenously, just before the patient left the table; the administration of oxygen and carbon dioxide, or oxygen alone; and calcium gluconate (10 cc. of a 10-percent solution), intravenously, would have averted the fatal convulsion.

The cause of socalled "ether convulsions" is not entirely settled, but certainly contributing factors are sepsis, dehydration and acidosis, a spasmophilic tendency, and probably too high a blood concentration of $CO_2$, during administration of the anesthetic.

### Solution by Dr. Wyatt

Convulsions under general anesthesia (also known as "ether convulsions") have been reported with increasing frequency. At first, it was presumed that these patients could not take ether or that the ether was impure. Both theories have been disproved. This boy had taken ether previously, for a tonsillectomy, and other children who have had convulsions under one ether anesthesia have taken it later without any complications.

*Convulsions have occurred under every form of anesthesia*, including that with cyclopropane. All such cases show hyperpyrexia. British writers feel that *atropine* is the cause of such convulsions. Seevers, after clinical and laboratory research, states that fever, plus carbon dioxide, plus a general anesthetic will cause convulsions. *Oxygen, not* carbon dioxide, should be given in treatment.

*Treatment:* A soluble barbiturate (Evipal, Nembutal, Pentothal Sodium) should be at hand for *immediate* use; when given intravenously, convulsions stop at once. Chloroform inhalations frequently control the convulsions, hence a can of chloroform should be kept in every operating room when a child is being operated upon for an acute septic condition. Oxygen should be given at once. Adrenalin (epinephrin) should be used immediately. *Atropine should not be used preoperatively.*

### Comments by George B. Lake, M.D., Waukegan, Ill.

The term, "ether convulsions," like several others, such as "muscular rheumatism," is a confession of inadequate diagnosis. The condition must have a *cause*, other than the ether itself, for Dr. Wyatt states that this patient had taken this anesthetic before, without untoward results.

Dr. Craig's suggestions as to the causative factors present in this case seems logical, but I wish that there had been more discussion of this case. Our readers seem to shy away from the more difficult cases; but they *have* to make *some* kind of a diagnosis when they meet such a case in practice, and it should be a real help to discuss impersonal cases, and find out where their diagnostic procedures are weak.

Since convulsions are, in themselves, *destructive*, they should be controlled, symptomatically, and Dr. Wyatt's suggestions in regard to being prepared for such emergencies are timely and should be heeded by all physicians.

## Problem No. 7 (Diagnostic)

### Presented by W. E. McKinley, M.D., Jewell, Kans.

THE patient, a girl six years old, had had no serious illness except measles, complicated by pneumonia, in April, 1936, from which she recovered completely.

On December 8, 1936, she was wakened by nausea and vomiting, and had a high temperature, which her mother treated with "household remedies." The next morning she was again vomiting and had pain in the abdomen. I was called late in the afternoon (December 9).

*Examination:* The very blonde little patient looked extremely ill and complained of severe pain over the entire abdomen, especially over McBurney's point and in the left lower quadrant, extending down the left flank. Her belly was rigid, tympanitic, and very tender, and she held her legs flexed on her abdomen. Her temperature was 103° F. On her gums and tongue there were ulcerated spots, with a streak of bright-red congestion on the left side of the pharnyx, extending down as far as I could see.

I immediately took her to a hospital, where a blood-cell count showed only 4,000 leukocytes, with 21 percent of myelocytes; 56 percent young forms; and only 2 percent of mature polymorphonuclears —a *marked* shift to the left (Schilling count).

Three high-class surgeons examined her and agreed that there was a surgical condition in her abdomen, but refused to operate with such a blood picture and advised expectant and symptomatic treatment.

On December 10, her leukocyte count was 3,900, with 46 percent myelocytes; 43 percent young forms; and 11 percent mature polymorphonuclears —a still more marked shift to the left (Schilling). Her temperature was 103.0° F. On the 12th she had several severe attacks of stercoraceous vomiting, which left her very weak. A suction apparatus was applied, which gave her a good deal of relief. Her temperature reached 104.6° F. and her leukocytes, 6,900.

On December 13, her temperature fell to 102.5° F., her leukocytes increased to 14,000, and the Schilling count moved slightly to the right, so that we felt encouraged. The next day the temperature was 101.3° F.; the leukocytes 18,000; and the Schilling count moved slightly to the right (myelocytes and young forms, 71 percent).

On December 19 she began to lose ground rapidly. On the 20th her leukocyte was 16,000, with a movement of the Schilling count to the left (myelocytes and young forms, 83 percent). She died on December 22. No autopsy was made.

*Requirements:* Suggest the diagnosis, *giving reasons*, and tell how you would have handled this case.

## DYING TOO SOON

*The worst unpleasantness connected with personal death is the unwarranted distress many people carry with them through life, in which they fail to prepare for living by thinking too deeply about dying.*—DR. DONALD A. LAIRD, *in* "More Zest for Life."

# Clinical Notes and Abstracts

## Prematurity: An Obstetric and Pediatric Symposium *

A PREMATURE baby is one that weighs 5½ pounds or less. The mentality of a premature baby is often normal. The fetus adds 100 Gm. of minerals during the last 3 months of intra-uterine life, so that diet during this time is very important.

### Anticipation of Premature Birth

The temperature of the room in which a premature birth is expected to take place should be maintained at from 80° to 85° F., and the humidity around 65 percent, by means of a teakettle or electric evaporator. The increased humidity prevents heat loss from the baby by radiation.

### Feeding

If a premature infant is fed too soon, or overfed, cyanosis will appear. If food is aspirated, pneumonia readily develops.

Normally, the birth weight of a premature baby is regained in from 16 to 18 days. The *minimum* feeding should be given that will result in a gain

**General Management**

| *Birth Weight, 1,500 Gm.* | *Birth Weight, 1,000 Gm. or less.* |
|---|---|
| 1.—Give nothing by mouth for from 24 to 36 hours. | 1.—Give nothing by mouth for 48 hours. |
| 2.—Inject from 2 to 5 cc. of whole blood daily. | 2.—Inject 2 cc. of blood daily. |
| 3.—Inject from 10 to 12 cc. of physiologic saline or saline-dextrose solution 2 or 3 times daily, beginning on the second day. | 3.—Inject 3 or 4 cc. of solutions. |
| 4.—Give 3 minims of whiskey every 3 hours. | 4.—Two minims of whiskey every 3 hours. |
| 5.—Feeding: From 4 to 5 cc. every 3 hours, increasing gradually, 0.5 cc. at each feeding, until gain begins. | 5.—Drop feeding (5 drops); add several drops to each feeding. |

Shock is prevented by (1) quick cleansing of mucous from the mouth, throat, and nose; (2) wrapping the baby in warmed cotton; (3) placing baby in a warmed room with plenty of moisture in the air; (4) lowering the head of the bed; (5) not disturbing the baby at all for from 4 to 12 hours; (6) being ready to resuscitate; and (7) delaying ligature of the umbilical cord for four minutes, until the baby has received ½ ounce of additional blood. Cyanotic attacks are to be expected during the first 6 hours. Three-fourths of premature infants vomit intermittently for the first 4 days.

Sterile technic should be used in handling and caring for the premature infant. Attempts should be made to make the infant cry, by gentle measures—rubbing the skin; dropping a little ether on the skin; administering oxygen or carbon dioxide-oxygen; mouth-to-mouth insufflation (quick, short, gentle breaths—although this method is not recommended). A modified Drinker respirator ("iron lung") or an E. and J. respirator is valuable, if available. Severe measures, such as swinging the infant or dropping it in icecold water, may produce shock. Chemical stimulation should be given only when mechanical stimulation fails, and may consist of Coramine or alphalobelin. Do not heat the infant over 98.6° F.

in weight. Olac (Mead-Johnson Co.) is a good, readily-soluble substitute for milk. Two-thirds breast milk and one-third skimmed lactic-acid milk, or canned milk formulas, are effective.

These infants are usually not strong enough to nurse at the breast. They may be fed through a small stomach tube, thus saving them from fatigue (the tube should be measured from the nose to the xiphoid of the baby, as this length will permit the opening of the tube to be below the cardiac orifice), in amounts of 4 cc. This method permits relief of distention, which is common in premature infants. A medicine dropper may have its point protected with an inch of rubber tubing, and the feeding thus deposited on the back of the tongue or in the mouth.

Vitamins A and D (as Percomorph oil) and 25 mg. of vitamin C (ascorbic acid) should be dissolved in *one* feeding each day.

### Obstetric Implications

Premature delivery takes place predominantly in association with toxemia, premature separation of the placenta, and placenta previa.

A *rapid or unusual gain in the mother's weight is often the earliest sign of toxemia. Toxemic pa-*

*Presented before the Wright County Medical Society, Apr. 22, 1940, at Eagle Grove, Ia. Reported by R. L. G.

*tients tend to go into shock.* Fairly large doses of analgesic drugs should be used, and low forceps should be employed, to avoid straining.

Toxemic patients must be closely watched for 36 hours after delivery, for the appearance of late convulsions (no convulsions will appear, *for the first time*, after 36 hours).

A hypertensive patient's life is shortened by each pregnancy, to the extent of 7 years. Sterilization or contraception should be employed in such cases.

Drs. Addisson Brown and Arnold Smythe.
Des Moines, Ia.

## The Rapid X-Ray Treatment of Hyperthyroidism

Surgeons contest, and rightly, that the one great disadvantage of roentgen-ray therapy in hyperthyroidism is the prolonged period of toxicosis which is allowed while small doses are being given over a period of many months. The surgical removal permits rapid freedom from toxicosis.

*We have never seen any ill effects following the use of comparatively large doses of roentgen rays in extremely toxic cases.* The doses used are not large enough to injure the skin. A dose of 750 r, once weekly, dividing the dose over 3 areas (right and left anterior-lateral and posterior), with a kilovoltage of about 130, 3 mm. aluminum filter, is the minimum dose indicated. This may be repeated from six to eight times.—S. C. Barrow, M.D., in *Radiology*, Aug., 1939.

## Antepartum and Neonatal Use of Vitamin K

The plasma prothrombin level of the newborn infant can be raised, not only by feeding vitamin K concentrate to the infant after birth, but also by administering it to the mother prior to delivery. The values obtained by maternal administration are often three times those normally seen, and in general are higher than those which can be attained by administering vitamin K to the baby after birth. Nine thousand (9,000) units (Ansbacher) were given, in one or two doses, less than 24 hours before delivery. After delivery, 1,000 units were given to each infant daily.—L. B. Shettles, M.D., E. Delfs, M.D., and L. M. Hellmann, M.D., in *Bull. Johns Hop. Hosp.*, Nov., 1939.

## Cheiropompholyx Due to Allergy

In a clinical note, some twelve years ago, I expressed the opinion that cheiropompholyx, or dysidrosis, is an allergic reaction to the ingestion of eggs or egg-containing foods, in susceptible individuals. With the passing years and the study of scores of patients with this affliction, I still maintain that the original idea is correct.

Care must be taken to exclude *epidermophytosis* when making a diagnosis. Dysidrosis always appears, as tiny vesicles, along the inner sides of the fingers, extending up to the hair line of the hand; rarely on the dorsum of the fingers; occasionally on the palms of the hands and the soles of the feet.

Knowles says that the condition may appear with rheumatism, arthritis, or focal infection. Semon thinks that the eruption is mainly mycotic in origin. Sutton admits that the cause is not definitely known; and Greenbaum, after a thorough and painstaking investigation by means of inoculation, autoinoculation, and complement fixation tests, concludes that pompholyx is a clinical entity, the cause of which remains unknown. Gardiner (1939) merely mentions that cheiropompholyx may be associated with seborrhoea of scalp and also with epidermophytosis of feet. MacKenna offers no suggestions. McKee and Cipollaro, in "Skin Diseases in Children," make no mention of cheiropompholyx. Schamberg ascribes the lesions to a vasomotor neurosis.

Abstention from eggs in any form, and from egg-containing foods, such as ice cream, pies, and cakes, will clear up the eruption.

I should like to see some of the younger members of the profession investigate this theory and report their ideas on the subject.

R. S. MacArthur, M.D., C.M.
Los Angeles, Calif.

## The Psychologic Factor in Chronic Rheumatism*

Chronic rheumatic diseases comprise a complex group of conditions which are very common, very disabling, and by no means easy to treat.

No one factor has been proved as a cause of the various forms of chronic rheumatism. Changes occur in all organs as a result of emotional disturbances; most interesting, from the present point of view, are changes in the respiratory exchange; the urinary and sweat secretion; both quantitatively and qualitatively on the circulation; on endocrine activity; and on the blood. Wittkower demonstrates that the leukocyte count can be altered, as an increase or a decrease, though without change in the differential picture. Changes in the serum calcium, potassium, and chloride contents occur, and possibly in the blood sugar.

Experiments on guinea pigs indicate that the rate of recovery from infection or injury is definitely hindered by painful or fear-producing emotional situations, while a decrease in the opsonin content is found in states of depression and painfully-toned emotions.

Herpes labialis may be produced experimentally by hypnotic reproduction of painfully-toned emotions. The tachycardia, pilomotor effects, and sphincteric relaxation associated with fear are examples of this relationship in everyday life, while the very numerous physical symptoms of anxiety states, the common psychoneurotic syndromes (enuresis, train sickness, etc.), and the obstinate constipation associated with melancholia are examples in the psychopathologic field.

There is symbolic significance in those joints which are the seat of pain and stiffness—the ankle to avoid taking a false step; the jaw to avoid giving away secrets; and, as a specific case, the stiffness and pain of the hips as a protest against intercourse and pregnancy, the condition promptly clearing up after sterilization. *The purpose is unconscious and these patients are not malingerers.*

When physical signs are not found to bear out the patient's description of his symptoms, it is a

*Brit. M. J.*, June 10, 1939.

sound rule for the physician to consider whether or not the symptom may serve a useful purpose to the patient, but it should be remarked that this purpose may not be obvious to the physician and the patient may give a clue only by his unconscious reactions. The stiff knee of the boy who does not want to play football or walk to school is a common enough example of a very simple kind. The girl who is prevented from going to dances because of severe pain in the back and is never done bewailing the fact, is an example of a less obvious case. Further investigation shows that, in fact, she is intensely sensitive about her tallness and has really persuaded herself that if she did go to a ball no one would ask her to dance. The symptom was serving a purpose because it was saving her from humiliation.

"We have been so concerned with the disease picture that we may have overlooked the real causes of function disturbances which are present. Deep-rooted fears, worries, resentments, and strain are often the basic causes of the ill health of a large number of rheumatoid cases. In looking for an answer to the self-centeredness which resulted in fear and resentment, we found the solution—the honest facing of oneself with the doctor, and the development of a vital faith. A deep religious faith is the most effective faith. We will fail in preventing recurrence unless we develop power for control of negative emotions (Swain)."

R. G. Gordon, M.D.

Bath, England.

## Physical Therapy in Infectious Arthritis*

All patients with infectious (rheumatoid) arthritis must rest at least 10 hours in bed at night, and take one hour of rest each morning and afternoon. After the acute stage has passed, the patient should be taught to carry his limbs through their full range of motion, in each direction, once daily, but not to irritate them by wiggling repeatedly. Sir Robert Jones said, "No adhesions can occur in 24 hours that cannot be easily overcome."

*Heat:* Hot baths, taken in the patient's own tub, may be of much value in increasing circulation and general metabolism. From 10 to 45 minutes of bathing, at temperatures of from 98° to 105° F. (36.6° to 40.6° C.) are sufficient. A simple, home-made "baker" may be constructed with a curved piece of sheet tin supported by four iron rods, beneath which four electric light bulbs are placed, in ordinary sockets. The average electric pad becomes too hot for the usual patient.

Local applications of paraffin may be used in any home. Ordinary paraffin is melted in a double boiler, and then cooled until a thin film forms on the top. At this time, it is painted onto the joint with an ordinary paint brush. About 12 coats are applied in rapid succession, and then left to cool, and remain in place for from ½ to 1 hour.

*Contrast baths:* Insertion of the joint or extremity into hot water for six minutes, and then in cold water for four minutes, alternately, stimulates circulation.

*Diathermy:* Short-wave diathermy will give good, penetrating, deep heat to the joints.

*Ultraviolet radiation* is occasionally of value, especially if marked asthenia and secondary anemia are present. Graduated exposures to direct sunlight or to artificial ultraviolet irradiation should be employed.

*Do not let the patient wear bedroom slippers,* as they really are not so comfortable as well-fitting shoes, and result in serious damage to the tarsal and metatarsal arches.

Frank Krusen, M.D.

Rochester, Minn.

*Arch. Phys. Ther., Mar., 1940.

## Procaine Injections in Fractures

Procaine hydrochloride has been used in fractures in which severe ligamentous injuries were primary and the fracture itself of secondary importance—chip fractures of humeral epicondyles, undisplaced fractures of the head of the radius, fractures of the head of the spinous process of the vertebra, and fractures of the transverse processes.

The patient's course after reduction is much more free from pain and function is restored very early. He may return to work at an early date.

*Technic:* From 10 to 30 cc. of a 1- or 2-percent procaine solution are injected at the site of *maximum tenderness.* The syringes and needles used are those ordinarily employed for local anesthesia. Before injection it is best to give these patients Sodium Amytal orally, in doses of from 1½ to 3 gr. (0.1 to 0.2 Gm.), to prevent an occasional procaine reaction. After the injection, the patient is encouraged to move at once. He is usually astonished to find painless motion possible. Repeated infiltrations, at daily intervals if necessary, are carried out if a recurrence of symptoms develops. The patient should be warned that increased pain will appear several hours after injection.

The same technic has been used in treating sciatica (into the nerve or into the epidural space), arthritis, bursitis, traumatic synovitis, sprains (inject at once, and patient is able to use joint), and contusions of muscle.—Tom Outland, M.D., in *J. A. M. A.*, April 6, 1940.

## Family Planning

Only by modern methods of family planning can parents be sure that they are in top physical form when their children are conceived, and thus give them the best possible chance for a happy and successful life.—Frank Wright, M.D., F.A.C.P., Chicago, Ill.

## Treatment of Amebiasis

The most effective combined therapy for amebiasis is: A *single* course of carbarsone, administered orally, consisting of 0.25 Gm. (4 grains) before breakfast and supper each day for 10 days; and simultaneously giving 250 cc. of a 2.5-percent chiniofon ("Yatren") solution, as a *retention enema,* every other day during this ten day period (a total of five treatments). Ninety-seven (97) percent of 104 patients so treated were cured (no amebas were found in the stools on weekly examinations carried out over a period of two months).

*Technic:* On the morning of each chiniofon treatment, breakfast is omitted. At 8:00 A.M., a

cleansing saline enema of about 750 cc. is given. At 9:00 A.M., an enema of 250 cc. of a 2.5 percent aqueous solution of chiniofon is given to the patient in the knee-chest position, which is maintained for 5 minutes. The patient then lies for half-hour periods on the right side, the back, the left side, and again on the back, to ensure the retention of the solution in the cecum and ascending colon.—J. G. MATEER, M.D., *et al.*, in *Am. J. Digest Dis.*, Apr., 1940.

## Two Laboratory Suggestions

### An Eye Shade for Microscopic Work

THE man who is doing nothing but laboratory work, and sits at his microscope for several hours every day, soon learns to disregard the images registered by the eye which is not in use, although it is wide open. But those whose microscopic work is only one of many duties often have difficulty in cultivating this faculty, and the muscular strain necessary to keep the idle eye closed is tiring.

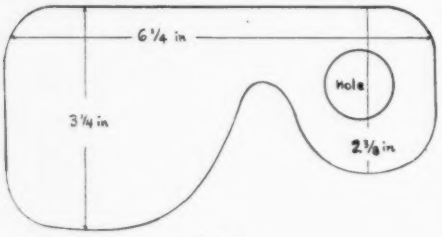


Fig. 1.

As a help to the large class of occasional laboratory workers, the screen or shade shown in Figure 1 may prove as welcome as it has to me.

Cut the shade out of very stiff cardboard (preferably black), making the hole of such a size as to fit snugly around the eyepiece of the microscope; remove the eyepiece; force the shade down over the upper end of the tube, and replace the ocular.

The shade may be readily adjusted to the most satisfactory position, and by turning it over will screen the right or left eye.

### "Toning" Wright's Stain

All laboratory workers know that Wright's stain does not keep well, so that old preparations frequently fail to make stains which show the features required.

Being in possession of a very limited quantity of this stain, on one occasion, I found that it had gone bad, and set to work to see if it could be improved.

When the smears were stained too blue (red cells lilac or violet, instead of red), a very small drop of acetic or hydrochloric acid was added to 100 cc. of the stain; when stained too red (leukocytes, especially lymphocytes, lilac or pinkish), a very small drop of normal sodium hydrate solution was added to 100 cc. of stain.

By adding very minute quantities of acid or alkali with a glass rod, and staining experimental slides after each such addition, the exact tone desired may be produced in a short time.

GEORGE B. LAKE, M.D.

Waukegan, Ill.

## Neoprontosil in Meningitis

NEOPRONTOSIL is less toxic than, and quite as effective as, sulfanilamide. Barlow has recently reported that, in laboratory animals, the oral minimum lethal dose of neoprontosil is nearly seven times as great as that of sulfanilamide. The action of neoprontosil depends upon some factor other than the small sulfanilamide content. It is effective orally when the concentration of sulfanilamide in the blood reaches from 1 to 3 mg. per 100 cc., as compared with the concentration of 10 mg., which is necessary when sulfanilamide is used.

*Dose:* Fifteen grains (1.0 Gm.) or more are given every four hours to adults (the same dose as sulfanilamide or sulfapyridine), and the same dose may be tried in children with severe infections, if they are more than five years of age. In still younger children, 10 grains (0.65 Gm.) are given every four hours.

*Streptococcic meningitis* has responded well to treatment with this drug. In *meningococcic meningitis*, neoprontosil is given concurrently with the serum, and appears to control the septicemia. *Pneumococcic meningitis* is better treated with sulfapyridine, as is also *influenzal meningitis*.—JOSEPHINE B. NEAL, M.D., in *N.Y.S.J.M.*, Jan. 15, 1940.

## The Treatment of Severe Asthma*

IN *mild* bronchial asthma, symptomatic relief is often obtained by single or repeated oral doses of ephedrine sulphate. When this is ineffective or is not tolerated by the patient, inhalations of epinephrine, 1:100 (*not* 1:1000), from a special atomizer, are frequently effective.

In *severe, acute bronchial asthma*, from 0.3 to 0.5 cc. of epinephrine hydrochloride may be given, at 15-minute intervals, until 4 injections have been given. If relief is not obtained, the asthma may be considered intractable.

It is the rule for severe asthma to recur. *Epinephrine-in-oil* (2 mg. of epinephrine in 1 cc. of peanut oil) may be given in the treatment of acute asthma, if 0.5 cc. of epinephrine hydrochloride, 1:1,000, is administered at once (to obtain quick relief, as the oil solution requires from 15 to 30 minutes to take effect). If relief is not obtained from repeated injections of epinephrine hydrochloride, it is useless to give epinephrine-in-oil.

*Epinephrine may be given to patients with hypertension*, because the blood pressure often falls to lower levels after the dyspnea is relieved by epinephrine.

*Sedatives:* Any of the barbituric acid derivatives may be used, as a final step in treating the patient. If asthmatic symptoms have persisted for a day or two, and rest must be guaranteed, give from 0.3 to 0.5 cc. of *Schlesinger's solution* [0.5 cc. contains 0.125 mg. of scopolamine hydrochloride; 10 mg. of morphine hydrochloride; and 15 mg. of Dionin (ethylmorphine hydrochloride)].

*Treatment of Intractable Asthma*

Epinephrine is inefficient in intractable asthma, as the bronchial mucosal swelling has developed to such a degree that this drug, alone, will not do

*Bull. Johns Hopkins Hosp., Jan., 1940.

the work. The edema may be lessened by the intravenous use of a hypertonic solution of dextrose or sucrose, thereby drawing excess fluid from the bronchial mucosa. Up to 100 cc. of 50-percent solution may be given, together with 0.5 cc. of epinephrine hydrochloride, 1:1,000.

*Aminophyllin* (theophylline ethylenediamine) will often afford dramatic relief. The dose is 0.48 Gm., diluted in from 10 to 20 cc. of physiologic saline or 50-percent dextrose solution. It must be given *slowly*, or the patient will complain of a feeling of heat, burning in the eyes, constriction of the chest, or nausea and vomiting.

One hundred percent oxygen inhalations are often effective. A mixture of 80 percent helium and 20 percent oxygen is inspired and expired with greater ease than pure oxygen. I give full doses of digitalis to my patients with intractable asthma.

*Opiates depress the respiratory center.* Rest may be obtained by giving from 60 to 120 cc. of a mixture of equal parts of ether and olive oil in the rectum. Avertin is very dangerous to the patient with severe bronchial asthma.

*Epinephrine-in-oil* provides relief, in severe, chronic bronchial asthma, for from 8 to 16 hours. Preferably, the injection should be given in the evening, with a morning and even a noon injection also added, if necessary.

*Iodized oil* instillations into the bronchi are effective for a few patients (especially those who have profuse expectoration—Ed.). Surgical treatment is promising, but not sufficiently studied, as yet.

Edmund L. Keeney, M.D.

Baltimore, Md.

**Look for THE LEISURE HOUR among the advertising pages at the back.**

## Gastro-Intestinal Symptoms of Hernia*

Hernias with small rings tend to produce more gastro-intestinal symptoms than larger ones. Headaches and such symptoms as constipation, flatulence, colic, and vomiting, are not uncommon. The more the hernia is obstructed, the more obstinate the constipation, which may be very severe in hernia of the sigmoid. Epigastric and obturator hernias cause gastro-intestinal symptoms out of all proportion to their size.

*Inguinal:* Small inguinal hernias produce more pain than large ones. The large ones produce a "dragging down" sensation and cause nervousness. Small ones cause pain which may be localized in the inguinal canal, or rather indefinitely located in the lower quadrant. The pain is often associated with some nausea and constipation and if on the right side may simulate *mild appendicitis.* The diagnosis is often difficult.

*Femoral* hernia is often overlooked, because it is inconspicuous, causing very little protrusion and, in fat persons, none at all. The modesty of some elderly women, during a complete examination, may prevent a diagnosis.

*Umbilical* hernias, even when small, cause more symptoms than inguinal or femoral hernias.

*Epigastric* hernias cause dragging epigastric pain after eating, occasional vomiting, colicky pains, and constipation. Often, when the hernia is reduced, immediate relief of symptoms follows. Pressure on the sac causes reflex eructations or nausea. No abdominal examination is complete without a careful examination of the linea alba, from the xyphoid to the umbilicus, with the patient relaxed and with the muscles tensed by lifting the head or lower extremities.

*Diaphragmatic* hernia cannot be excluded unless a roentgenologic examination is made with the patient in the recumbent position, with manual pressure over the abdomen. This applies especially to the small diaphragmatic hernias, which often cause marked symptoms. The condition should always be kept in mind in obscure abdominal conditions which are not otherwise readily accounted for.

*Abdominal muscle strain:* A partial tear of the rectus muscle from the xyphoid process results in pain on exertion and tenderness on pressure over the xyphoid.

Amos Koontz, M.D.

Baltimore, Md.

*Rev. Gastroenterology, Jan.-Feb., 1940.

## The Treatment of Wounds

The first principle in the treatment of wounds is to cause the least trauma possible. The wound should be cleansed thoroughly, and one of the best methods is to use plenty of water and soap. Water does not damage the tissues, as do the expensive antiseptics. Time should be taken to remove *all* the debris and foreign matter, or healing may be delayed and infection is possible. It must not be forgotten that an antiseptic strong enough to kill bacteria is strong enough to kill tissue cells.

Another essential in treating wounds is to exercise care that the tissues are kept at rest until healed. *If we would give as much attention to the proper rest of the soft tissues of a wound as we do to those of a fractured bone, much better results would be obtained.*

Sutures should not be placed too close together or pulled too tight. Some wounds are best left wide open, when heavy contamination has occurred and extensive debridement cannot be carried out.—W. J. Lackey, M.D., in *South. Med. & Surg.*, Dec., 1939.

## Injuries to the Aged

Injury to the soft parts in the aged, without an open wound, may be, and often is, a serious problem. What, in a young person, would only have been a severe bruise, may develop, in the old, into a large sloughing area, with gangrene of the overlying skin. This is presumably due to the abnormal fragility of the vessels and poor nourishment of the tissues.

Severe bruises, therefore, must be treated with caution; all pressure is to be avoided after from 24 to 48 hours, when capillary oozing will have ceased. Gentle heat from an electric pad, applied intermittently, is of value. Fierce heat and, worse still, cold, in the form of an icebag, may precipitate skin gangrene.

*Open wounds* of the soft parts are more liable to infections, and healing is slow.

*Fractures*, in old persons, are said to unite poorly or not at all, but my experience does not bear this out, with the exception of the intracapsular

fracture of the neck of the femur. Careful reduction and immobilization of a Colles's fracture will pay dividends in the form of a useful wrist. Patellar fractures have been treated by excision of the patella, with a resulting useful limb. Occasionally, after healing has taken place, the fractured ends separate without being subjected to abnormal stress.—C. FRANKAU, D.S.O., M.S., in *Proc. Royal Soc. Med.*, Sept., 1939.

## Removing Picric Acid Stains

To remove picric acid stains from the skin, paint the stained area with collodion and let it dry; then peel it off and the stain will come with it.—*Oil, Paint, and Drug Reporter*, May 22, 1939.

## Anesthesia and Shock

INDIVIDUALS under anesthesia are not immune to the shocking and traumatic acts which are being performed upon them. The patient suffers equally with or without anesthesia, but in the former event has no immediate knowledge of it. Procedures which create a convenient technical operative field for the surgeon, and submit the patient to rigors which could clearly not be borne without anesthesia, are to be condemned.—Editorial, *West. J. Surg., Obst. & Gynec.*, Dec., 1939.

[The good surgeon employs a nerve block or local infiltration with procaine solution, when approaching structures which are especially painful when incised without analgesia, such as the peritoneum, tendons, skin, synovia, and tissues around the orifices of the body.—ED.]

## Cyanosis in the Newborn

CYANOSIS in the newborn infant may be caused by (1) *mucus* in the throat, mouth, or larynx; (2) *tongue swallowing* or aspiration; (3) *nasal obstruction;* (4) *intracranial hemorrhage or edema;* (5) *atelectasis*, usually associated with mucus (commonly seen in premature infants and may be associated with intracranial injuries); (6) *pneumothorax;* (7) congenital heart disease; and (8) such rare causes as hypoglycemia due to adrenal hemorrhage, pneumonia, peritonitis, etc.

*Intracranial hemorrhage or edema:* Sudden death usually occurs, with cyanosis, convulsions, or pallor. When death occurs at the height of a cyanotic attack, it is most likely to be due to a subtentorial hemorrhage (which accounts for the majority of sudden deaths during the first hours of life). If death is delayed, intermittent attacks of cyanosis are the most constant symptoms of bleeding below the tentorium. Convulsions may not occur and the fontanelle is usually not full or tense. Convulsions, pallor, and a change in the fontanelle are the usual symptoms *of supra*tentorial bleeding.

*Drugs* given to the mother, such as mixtures of nitrous oxide and oxygen, morphine, and large doses of barbiturates, given within three hours of delivery, may cause cyanosis. Nitrous oxide should never be given in stronger concentrations than 90 percent.—J. C. JAUDON, M.D., in *Miss. V. Med. J.*, Sept., 1939.

## Right-Side Heart Failure*

THE symptoms and signs of right-side heart failure are of two categories: The first comprises the manifestations of the antecedent or associated cardiopulmonary disease; the second includes the disturbances produced directly by the hypertrophy, dilatation, and failure of the right cardiac chambers.

The manifestations of the underlying cardiopulmonary disease are: (1) cyanosis; (2) dyspnea; (3) polycythemia; (4) hemoptysis; (5) clubbing of the fingers and toes; and (6) the specific signs and symptoms of the particular disease present, such as chronic bronchitis, emphysema, pulmonary fibrosis, and similar lesions.

The disturbances arising directly from the strain and failure of the right cardiac chambers are: (1) increased venous pressure, affecting the territories of both venae cavae and resulting in: (a) engorgement of the superficial veins; (b) subcutaneous edema; (c) visceral congestion, with palpable enlargement and tenderness of the liver; (d) transudation into the serous cavities; (e) oliguria, with albumin and sometimes blood in the urine, due to passive congestion of the kidneys; and (f) increased cerebrospinal pressure; (2) hypertrophy and dilatation of the right auricle, right ventricle, and conus, and dilatation of the pulmonary artery, which are demonstrated most readily by roentgenray examination and often, also, by palpation (lower sternal thrust) and percussion of the filling of the pulmonary artery and conus; (3) accentuated pulmonic second sound and the presence, in the left second and third interspaces, of murmurs, thrills, and gallop rhythm; and (4) low systemic blood pressure.

*Treatment:* In all cases, digitalis and diuretics should be tried; *much relief* is obtained by the removal of occult edema, even if no visible congestion is present.

I. C. BRILL, M.D.

Portland, Ore.

## Estrogenic Treatment of Uterine Inertia

THE prophylactic administration of estrogenic substance (Theelin, Amnioton, Progynon) to gravid women in whom there exist physical or other conditions conducive to uterine inertia, appears to be a desirable procedure. These patients showed posterior position, uterine atony, general ill-health, and other reasons for supposing that the labor was likely to be prolonged and difficult. From 10,000 to 20,000 units were given, at intervals of from 8 to 12 hours, for 4 or more days. Labor was rapid and easy, despite the presence of malposition of the fetus, minor degrees of pelvic contraction, uterine atony, hydramnios, and allied complications.

In prolonged labors due to uterine inertia, the injection of estrogenic substances at hourly intervals, in the same doses, for from 8 to 10 hours was carried out. Good results were obtained in 75 percent of cases. The benzoate esters were less effective, unit for unit, than estrone. Aqueous solutions were more effective than oily solutions. —T. N. A. JEFFCOATE, M.D., in *J. Obst. & Gynec. Brit. Emp.*, Sept., 1938.

*Ann. Int. Med., Sept., 1939.

# Diagnostic Pointers

## Vitamin B Deficiency

● Flatulence, eructations, constipation, and anorexia are frequently encountered in patients who are deficient in vitamin B. Neuritis, neuralgia, headache, vague pains in different parts of the body, myasthenia, paresthesias, myalgia, muscle tenderness, paresis, and paralysis are also often found in such persons.

Edema and shiny skin of the legs, not accounted for by cardiac or renal lesions, frequently responds to vitamin B therapy. Varicose veins, hemorrhoids, varicocele, and other vascular abnormalities are noted. After a period of vitamin B therapy, the large forearm veins may become so reduced that it is much harder to give intravenous injections.—W. J. McCormick, M.D., in *Med. Rec.*, Mar. 20, 1940.

## Tuberculosis in Athletes

● Tuberculosis has been considered a disease of the weak and malnourished, and it has been widely taught that a strong, athletic body is the best safeguard against it. Yet such athletes as Christy Mathewson, Rube Waddell, Hughey Jennings, and Frank Chance, of baseball fame; Frank Hinkey, famous Yale football end; and Joe Gans, George Dixon, and other well known pugilists, all died from this disease.—*Southern Medicine and Surgery*, Jan., 1940.

## Cancer of the Pancreas

● Cancer of the pancreas is an operable lesion, if diagnosed early. Important symptoms are: (1) persistent, inexplicable abdominal pain; (2) rapid weight loss; (3) intractable diarrhea (rarely); (4) persistent nausea unrelated to meals; or (5) peculiarly unbearable epigastric distress. The abdominal pain radiates to the back and is increased at night or when the patient is lying down.—J. E. Dunphy, M.D., in *Am. J. Digest Dis.*, Feb., 1940.

## Diabetes and the Eye

● Diseases of the insular system of the pancreas are frequent causes of ocular disturbances. There is no part of the eye or of its adnexa which may escape the ravages of diabetes. Even supra-orbital neuralgias may occur in diabetic patients. Restoration to normal often follows a general improvement in the diabetes.—W. Thau, M.D., in *E. E. N. & T. M.*, Dec., 1939.

## Nutrition and Allergy

● Nutritional deficiencies and toxicoses are the basis of all allergies.—Burton Haseltine, M.D., F.A.C.S., Chicago, Ill.

## Thiamin Chloride (Vitamin $B_1$) in Herpes Zoster

● The pain of herpes zoster is relieved more promptly, the lesions clear up at an earlier date, and the total disability time is notably reduced, if injections of thiamin chloride, 3,000 units, daily or every other day, for six injections, are given.—M. J. Goodman, M.D., in *Calif. & West. Med.*, Aug., 1939.

## Bromine Poisoning

● Bromides, judiciously used, are among the most valuable drugs available for many disorders wherein nervous tension plays a part. They are capable, however, in prolonged or excessive use, of producing toxic mental symptoms themselves. It behooves all physicians, whether in general or special practice, to keep this in mind and to be on the lookout for signs of bromide intoxication when prescribing this valuable drug.—Frank Garm Norbury, A.M., M.D., F.A.C.P., Jacksonville, Ill.

## Rectal Examinations

● A rectal and proctoscopic examination should be carried out on every patient who complains of: (1) bleeding from the rectum; (2) persistent diarrhea; (3) chronic constipation; (4) itching in the rectum or vagina; (5) any discomfort in the back, hip, or anus; (6) any abnormal bowel function; (7) a sense of fullness in rectum; or (8) urinary frequency (which may be due to a rectal fissure.)—M. H. Streicher, M.D., in "Proctoscopic Examination" (Charles C Thomas, Publisher).

## Heart Disease in the Old

● Dyspnea, angina, palpitation, or decompensation may be the only symptoms of cardiac disease resulting from a "silent" goiter or hyperthyroidism. Tachycardia averages 100 beats per minute, which is a substantial increase from the normal slow rate for old persons.—J. T. Freeman, M.D., in *Pennsylvania M. J.*, Mar., 1940.

## Hypothyroidism

● Pain in the abdomen, pallor, a dry skin, normal or subnormal blood pressure, a tendency to subnormal temperature, mental depressions and poor memory, sparseness or absence of pubic hair, and leukopenia with a high lymphocyte count, should be sufficient evidence of hypothyroidism.—A. Bassler, M.D., in *J. A. M. A.*, Apr. 6, 1940.

● Organic disease is what we *say* we cure, and we don't. Functional disease is what the quacks cure and we wish we could.—Dr. F. G. Crookshank.

# Thumbnail Therapeutics

## Liver Extract in Ulcerative Colitis

● The intramuscular injection, two or three times weekly, of 5 units of unconcentrated liver extract often causes a definite improvement in idiopathic ulcerative colitis. Appetite and weight are increased and diarrhea decreases. A maintenance dose of 20 U.S.P. units is necessary, given every one to three weeks.

If improvement does not follow liver extract injections, the diagnosis should be carefully reconsidered, and such factors as allergy, nervous instability, and health-lowering conditions sought for.—G. CHENEY, M.D., in *Calif. & West. Med.*, Feb., 1940.

## Paroxysmal Tachycardia

● The injection of 1/24 or 1/30 gr. (2.6 or 2 mg.) of apomorphine quickly terminates the average case of paroxysmal tachycardia.—G. E. FINKLE, M.D. in *Am. J. Digest Dis.*, Apr., 1940.

## Vitamin B in Nervous Diseases

● Rapid regression of pain and paralysis have been noted in patients with acute anterior poliomyelitis, who were treated by injections of vitamin B. Chronic postencephalitic parkinsonism has also been much benefited. Muscles regained their strength in dramatic fashion in one case of progressive muscular atrophy. Many forms of vitamin B deficiency have been masquerading as obscure neurologic conditions in our modern civilized life. —W. J. MCCORMICK, M.D., in *Med. Rec.*, Nov. 1, 1939.

## Individualized Treatment

● In "The Importance of Living," Lin Yutang writes, "*A doctor who prescribes an identical treatment for an identical disease in two individuals, and expects an identical development, may be properly classified as a social menace.*" Two persons with different environments and ways of thinking cannot have *exactly* the same disease.—B. L. WYATT, M.D., in *New York State J. Med.*, Nov. 1, 1939.

## Urinary Retention

● Postoperative and puerperal urinary retention may lead to urinary infection. The administration of 15 grains (1 Gm.) of sulfanilamide daily, beginning on the day of operation or delivery and continuing for five or six days, definitely prevents the appearance of clinically important urinary infection. We feel that intermittent or frequent catheterization leads to less infection than the use of an indwelling urethral catheter.—L. K. STALKER, M.D., and T. L. SCHULTE, M.D., in *Proc. Staff Meet. Mayo Clinic*, Mar. 6, 1940.

## Aluminum Hydroxide in Gastric Hyperacidity

● Aluminum hydroxide lowers stomach acidity both directly and indirectly; it acts for a prolonged period and there is no after-effect of increasing gastric acidity. Its greatest effect is produced when it is given some time before meals. It has no harmful general or local effect.—S. A. KOMAROV, M.D., in *Am. J. Digest Dis.*, Apr., 1940.

## Treatment of Placenta Previa

● Forced delivery, internal version, and breech extraction should not be used in the treatment of placenta previa. *Rupture of the membranes,* with or without the use of a Willet scalp clamp, gives good results in selected cases. In all cases of central placenta previa, and in certain marginal cases, patients are best treated by cesarean section. The type of placenta and the condition of the cervix determine the best method of delivery. The more frequent and liberal use of blood transfusions decreases the maternal and infant morbidity and mortality rates.—I. A. SIEGEL, M.D., in *Am. J. Obst. & Gynec.*, Feb., 1940.

## Chronic Otitis Media

● X-Ray therapy is valuable for treating old chronic running ears.—A. F. HOLDING, M.D., in *N.Y.S.J.M.*, Jan. 15, 1940.

## Blood Transfusion in Infants

● The loss of even a small amount of blood is a serious matter in an infant. The ratio of blood to body weight in a child is 1:20, and in an adult, 1:13. The loss of 1 cc. of blood in a ten-pound infant is the volumetric equivalent of 18 cc. in a 150-pound man. The best transfusion dose is one ounce per three pounds of body weight (20 cc. per kg. of body weight).—M. F. CAMPBELL, M.D., in *South. Surg.*, Oct., 1939.

## Sulfanilamide and Barbiturates

● Careful studies at the Mayo Clinic show that patients who received both sulfanilamide and a barbiturate (chiefly Nembutal), coincidentally, experienced no unpleasant results from this combination of drugs. This point is of importance where patients need a sedative along with the sulfanilamide.—W. L. M. KING, M.D., in *Proc. Staff Meet. Mayo Clin.*, Jan., 10, 1940.

## Peripheral Vascular Disease

● One might well say, "Your legs or your cigarets," and refuse to treat a patient with peripheral vascular disease who continues to smoke.—C. A. MOYER, M.D., in *Arch. Surg.*, Feb., 1940.

THE DOCTOR'S STUDY

*I am scarce able, with much ado, to make one half-year's allowance shake hands with the other. And yet if a book of four or five shillings come in my way, I buy it, though I fast for it; yea, sometimes of ten shillings.*—GEORGE HERBERT.

# New Books

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE AND SURGERY, Waukegan, Ill., is accompanied by a check for the published price of the book.

## Medical Specialties

### Allen

SPECIALTIES IN MEDICAL PRACTICE. *By* EDGAR VAN NUYS ALLEN, M.D., *Editor, Chief of a Section in the Division of Medicine, The Mayo Clinic, Rochester, Minnesota; Associate Professor of Medicine, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. With a Foreword by* DONALD C. BALFOUR, M.D., F.A.C.S., F.R.C.S. (ENGLAND), F.R.A.C.S., *Consultant in Surgery, The Mayo Clinic; Professor of Surgery and Director, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. In Two Volumes. New York: Thomas Nelson and Sons.* 1940. *Price,* $25.00.

FEW general clinicians are adequately prepared to deal with many of the conditions usually treated by specialists, nor have they the privilege of referring patients with minor specialized disorders without charge, as is done in the larger hospitals and clinics. This work is intended to furnish clinicians and medical students with concise, up-to-date information about twelve medical specialties, each of which is discussed by a recognized leader in his particular field with the clear purpose of facilitating *diagnosis* and outlining *treatment*. Other material, however interesting, is skeletonized or omitted.

The specialties covered are: Ophthalmology; diseases of the ear, nose, and throat; neurology; psychiatry; vitamins and vitamin deficiency diseases; allergy; orthopedic surgery; obstetrics and gynecology; endocrinology; urology; proctology; and dermatology and syphilology (the last is in preparation). An adequate working bibliography follows each section.

Most physicians are more or less familiar with "Nelson's Loose-Leaf Medicine," so it is needless to dwell on the excellent bookwork (paper, typography, and binding). The illustrations in this work, while not profuse, are well chosen, clearly reproduced, and quite adequate for their intended purpose. There is a satisfactory index. Loose-leaf service on the book will be furnished at the discretion of the editor, at a cost of 2 cents a page.

General clinicians and students have long felt a need for a book like this, giving all the special information needed by anyone except a strict specialist. If the price seems high, figure out what it would cost to buy one text on each of these twelve specialties, and then remember that this one will give the information most physicians need *better* than the more elaborate treatises.

## Shock

### Scudder

SHOCK: Blood Studies as a Guide to Therapy. *By* JOHN SCUDDER, M.D., MED. Sc.D., F.A.C.S., *Surgical Pathological Laboratory of the College of Physicians and Surgeons, Columbia University; Department of Surgery, the Presbyterian Hospital, New York University. 55 Illustrations. Philadelphia, Montreal, London: J. B. Lippincott Company.* 1939. *Price,* $5.50.

THIS beautifully printed monograph is a masterpiece of bibliography and reference work. The busy surgeon would wish, however, that the author had carried out more work on patients and would present his clinical findings in a brief, usable manner, rather than interlarding them with case reports.

There is much material of practical value, such as the use of saline solution combined with transfusions; and re-emphasis on the employment of heat and relief of pain, in the treatment of shock.

The author is convinced that potassium determinations are of value in diagnosing shock and its extent, and that these cases can be diagnosed early by determining the venous pressure and weighing a drop of peripheral blood. He feels that stored blood is not so effective for transfusions as fresh blood.

## Atlas of Surgical Operations

### Cutler and Zollinger

ATLAS OF SURGICAL OPERATIONS. *By* ELLIOTT C. CUTLER, *Moseley Professor of Surgery, Harvard University, and Chief Surgeon of the Peter Bent Brigham Hospital, etc., and* ROBERT ZOLLINGER, *Assistant Professor of Surgery, Harvard University, and Senior Associate in Surgery at the Peter Bent Brigham Hospital. Illustrated by* MILDRED B. CODDING. *New York: The Macmillan Company.* 1939. *Price,* $8.00.

THIS is the simplest, best illustrated book on surgical technic available today. Illustrations of operative steps are printed on one page, and brief, pointed remarks on the opposite page, so that correlation is easy. Wherever possible, all the steps used in carrying out one operation are furnished on one page.

The operative sketches are exceptionally clear and illustrate each important step so well that its significance may be readily grasped. Miss Codding is to be congratulated on the high standard of her artistic efforts, and the Macmillan Company on

its beautiful publication of this large, folio-size book.

All the common procedures in general surgery are described—tonsillectomy; thyroidectomy; radical mastectomy; repair of all types of hernia, including the living suture method; opening of the abdomen and its closure; gastrostomy; gastrojejunostomy; cholecystectomy (retrograde and from the fundus); resection of small intestine (end-to-end and lateral anastomosis); appendectomy; all the surgery of the colon and rectum; gynecologic surgery (both abdominal and vaginal procedures); nerve and tendon suture; excision of the saphenous vein; skin grafts; amputations; and many others. Short chapters discuss surgical technic, anesthesia, and preoperative and postoperative care.

All young surgeons who feel that speed is the most important essential of surgery would do well to read Cutler's views on rough, fast operations, and his advocacy of gentle handling of tissues.

If you have a friend who is a surgeon, give him this book for a birthday or Christmas present.

## Differential Diagnosis

### Naegeli

DIFFERENTIAL DIAGNOSIS IN INTERNAL MEDICINE. *By* PROF. DR. MED. O. NAEGELI, *Late Director of the University Clinic of Zurich, Switzerland. Authorized Translation by* SIMON P. SPILBERG, M.D., *Head, Department Internal Medicine, Mount Sinai Hospital, Milwaukee, Wisconsin.* 162 *Illustrations. Chicago: S. B. Debour, Publishers.* 1940. *Price,* $10.00.

TO make a diagnosis, one must first consider what diseases could cause the signs and symptoms presented by the patient, and then read the descriptions of the various illnesses and attempt to formulate an accurate differential diagnosis.

Naegeli considers, first, the symptoms presented by the patient, and second, their differential diagnosis. Each system of the body is considered from the standpoint of differential diagnosis—lymph gland disease; the anemias; hemorrhagic, liver and bile duct, and abdominal diseases; appendicitis and peritonitis; abdominal effusions; diseases of the pancreas, lungs, intestines, and pleura; fevers; joint, cardiovascular, kidney, nervous, and glandular disorders.

This is the work of a master clinician of the old school, who is well aware of the laboratory and the help it can give.

Apparently the author and his translator have not noted researches of Wangensteen and others, which show that appendicitis is primarily *obstructive*, not infective. Naegeli does not make a diagnosis of appendicitis unless evidence of infection is present, and thereby misses many an early case.

The illustrations are first-rate, especially those on blood pictures.

The book should be on the shelves of general practitioners and diagnosticians.

## The New International Clinics

### Piersol

THE NEW INTERNATIONAL CLINICS; Original Contributions: Clinics; and Evaluated Reviews of Current Advances in the Medical Arts. *Edited by* GEORGE MORRIS PIERSOL, M.D., *Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia. Vol. 4; New Series 2. Philadelphia, Montreal, New York: J. B. Lippincott Company.* 1939. *Price,* $3.00 *for current year;* $5.00 *for back years.*

THIS issue of the Clinics offers a well balanced group of articles and surveys of recent advances. The use of sulfapyridine in pneumococcal, streptococcal, and staphylococcal infections; the diagnosis of pseudo-arteriosclerosis (a new pathologic entity); vitamin K in pseudohemophilia hepatica of childhood; and the treatment of angina pectoris are especially well presented. The last-named article should be read by every physician, because it emphasizes the many causes of anginal pain that are *not* related to the heart, and because it suggests helpful methods of treatment, thus encouraging the optimistic attitude on the part of the physician, which does so much to help the patient feel that he will receive aid.

A series of cases of massive hemorrhage from peptic ulcers has been carefully studied, both clinically and at the autopsy table, by Kirsner and Palmer, of the University of Chicago. Their conclusions as to the relative value of medical and surgical treatment are well balanced.

Several of the clinical-pathologic conferences of the Cook County Hospital are well presented by Schiller.

## Brain and Cord Lesions

### Bing and Haymaker

COMPENDIUM OF REGIONAL DIAGNOSIS IN LESIONS OF THE BRAIN AND SPINAL CORD; A Concise Introduction to the Principles of Localization of Diseases and Injuries of the Nervous System. *By* ROBERT BING, *Professor of Neurology, University of Basel, Switzerland; Translated and Edited by* WEBB HAYMAKER, *Assistant Clinical Professor of Neurology and Lecturer in Neuro-Anatomy, University of California. Eleventh Edition.* 125 *Illustrations,* 27 *in Color; 7 Plates. St. Louis: C. V. Mosby Company. Price,* $5.00.

THIS is a practical, instantly applicable book, which assists the physician in one of the most exacting tasks in clinical medicine—that of making an accurate, complete diagnosis of lesions of the central nervous system.

By diagrams and clear text, Bing drives home the practical facts on which the science of neurology is based. His brief descriptions of the neuroanatomy concerned are helpful. The newcomer to neurologic diagnosis is aided by statements that sweep much extraneous material out of his mind, such as: "In most persons, the cremaster, abdominal, and plantar reflexes may be elicited. *The localizing value of cutaneous reflexes is very limited,* because they may be lost in lesions situated far above the level which is generally mentioned as the site of their reflex arc."

This book is a godsend to the general practitioner who only occasionally comes in contact with neurologic cases, and yet is valuable to the neurologist, also.

## Cleft Palate

### Vaughan

CONGENITAL CLEFT LIP, CLEFT PALATE, AND ASSOCIATED NASAL DEFORMITIES. *By* HAROLD STEARNS VAUGHAN, M.D., D.D.S., F.A.C.S., *Professor of Clinical Surgery, New York Post-Graduate Medical School, Columbia University; Attending Surgeon, New York Post-Graduate Hospital, etc. Philadelphia: Lea and Febiger.* 1940. *Price,* $4.00.

THIS is a complete, practical monograph on the anatomy and surgery of the deformities discussed. The author rightly stresses the present-day concept of surgery of the lip and palate, that anatomic reconstruction is not enough, and that the attainment of normal function and speech should be the goal of the surgeon. Related specialties (orthodontia and prosthodontia) are considered by Porter and Fitz-Gibbons.

The surgical technics that have worked out successfully for the author are described and well illustrated. This book is of value to the oral surgeon, the pediatric surgeon, and the general surgeon who carries on these procedures. Complications are described and treatment for them indicated.

## The "Safe Time"

### Latz

THE RHYTHM OF STERILITY AND FERTILITY IN WOMEN. *By* LEO J. LATZ, A.B., B.S., M.D., LL.D., *Sixth Revised Edition; 200th thousand. Chicago: Latz Foundation, Republic Building.* 1939. *Price,* $1.00.

WHEN science and religious dogma conflict, human nature is such that science usually is forced to retreat. This little volume purports to present an almost perfect method of avoidance of pregnancy, yet states that it is not a method of contraception!

A layman's discussion is given of the physiologic background of the Ogino-Knaus theory of rhythmic fertility and infertility; of the methods used in recording calendar charts of menstruation, needed

to fix the "safe" times; and of the ingenious arguments advanced to prove that the prevention of pregnancy by mechanical charting in no way resembles the "sinful" prevention by other mechanical and chemical means (jellies or diaphragms). The scientific portion of the book is well written and reasonably accurate. The portion on ethics expatiates at length on such mysticisms as "God's will."

How a physician can recommend such a book to an intelligent patient, as a sole and reliable method of birth control, is a puzzle, and probably most of these little books are sold direct to the public.

## Dermatology

### Walker and Percival

AN INTRODUCTION TO DERMATOLOGY. *By* NORMAN WALKER, KT., M.D., LL.D., F.R.C.P., *Consulting Physician; and* G. H. PERCIVAL, M.D., PH.D., F.R.C.P., *Physician for Diseases of the Skin, Royal Infirmary, Edinburgh. Tenth Edition.* 102 *Plates;* 96 *Illustrations. Baltimore: The Williams and Wilkins Company.* 1939. *Price,* $7.00.

WALKER'S book was first published forty years ago, and has been well received during the publication of the nine preceding editions. The language is clear and explicit and the colored illustrations depict skin diseases in a life-like manner.

It is an uncommon and enjoyable experience to read a dermatologic text which does not present an abstruse classification and does not recommend a large number of rare and unusual medicines for each disease.

The author has the faculty of putting into one or two paragraphs the gist of a topic. The discussions on drug eruptions are classical in their brevity and volume of information. The illustrations are well selected and well reproduced.

The general practitioner will find this a *practical, usable* book of reference in its field.

## Mental Health

MENTAL HEALTH. *Publication Committee:* WALTER L. TREADWAY, *Chairman,* NOLAN D. C. LEWIS, ABRAHAM MYERSON, JOSEPH ZUBIN, HARRY STACK SULLIVAN, CLARENCE M. HINCKS, *and* FRANKLIN G. EBAUGH; FOREST RAY MOULTON, *Editor. The American Association for the Advancement of Science: The Science Press, Lancaster, Pennsylvania.* 1939. *Price,* $3.50.

THE American Association for the Advancement of Science has published three previous symposiums, on cancer, tuberculosis, and syphilis. This symposium consists of 49 papers, 20 invited formal discussions, and 21 informal discussions. Distinguished authorities discuss the various aspects of mental health and disease.

The first section presents orientation and methods in psychiatric research; the second considers sources of mental disease, their amelioration and prevention; the third deals with physical and cultural environment in relation to the conservation of mental health; the fourth outlines mental health administration; and the fifth discusses professional and technical education in relation to mental health.

Any physician interested in mental diseases (as *all* should be), cannot fail to be interested in and learn much from this volume. The hospital administrator, the psychologist, and the public health nurse, as well as all clinicians, will find a valuable source of information.

## Blood Groups and Blood Transfusion

### Wiener

BLOOD GROUPS AND BLOOD TRANSFUSION. *By* ALEXANDER S. WIENER, A.B., M.D., *Serologist and Bacteriologist to the Chief Medical Examiner of New York City, Springfield, Illinois, and Baltimore, Maryland; Charles C Thomas, Publisher.* 1939. *Price,* $5.00.

THIS thin monograph covers, in a rather complete way, what is known of blood groups and their clinical and medico-legal application.

This is not a volume with much appeal for practicing clinicians, unless they have some special interest in the theoretical side of the subject. The technic of citrate transfusions is given, but what appears to be the most notable advance in years (the massive, continuous blood transfusion, activated by oxygen) is covered in two paragraphs.

In this second edition, the sections dealing with the indications for and reactions to transfusions have been much enlarged, and the information concerning the medico-legal applications of blood tests is presented in greater detail.

## Tuberculosis of Bone and Joint

### Girdlestone

TUBERCULOSIS OF BONE AND JOINT. *By* G. R. GIRDLESTONE, M.A., B.M., OXON., F.R.C.S., ENG., *Nuffield Professor of Orthopedic Surgery, Fellow of New College, Oxford; Hon. Surgeon and Hon. Clinical Director Wingfield-Morris Orthopedic Hospital, Oxford. London: Oxford University Press; Humphrey Milford.* 1940. *Price,* $8.75.

THIS well printed volume contains a complete resume of the author's work in the field of bone and joint tuberculosis, with the addition of other authorities' comments. He believes that a long period of treatment should follow even a questionable diagnosis of joint tuberculosis, because of the much poorer results obtained when one waits for unequivocal diagnosis.

Each joint is considered separately, in text, photograph, and roentgenogram, and methods of treatment given, with reasons therefor and results to be expected. A chapter on general methods of treatment gives sound advice. Sir Robert Jones and Hugh Owen Thomas, two of the most skillful orthopedists of recent years, have provided much of the background for the author's successful practice.

## Colds

### Cranston

COUGH YOUR HEAD OFF. If You Enjoy It; Or a Scientific Explanation of the Cause, Prevention and Treatment of Colds. *By* W. B. CRANSTON, M.D., *Chicago, Illinois. Chicago: Health Press Publishing Company,* 509 *N. Wells Street.* 1939. *Price,* $1.50.

THE author believes that "colds are a manifestation of allergy (perverted immunity), expressed by the mucous membranes of the respiratory and allied tracts, to infinitesimal amounts of tuberculous products, arising in very minute foci of tuberculous infection present in practically all adult members of civilized populations."

It is unfortunate that the author has written a half professional, half popular book, which turns out to be neither. If he has made a discovery of importance (and some of the most important advances in medicine have been made by physicians in just such a fashion), it would be well to publish it in a medical journal, so that its widespread application would quickly solve the problem of its utility.

## Heparin

### Jorpes

HEPARIN: Its Chemistry, Physiology, and Application in Medicine. *By* J. ERIK JORPES, M.D., *Associate Professor of Biochemistry, Karolinska mediko-kirurg Institutet, Stockholm, Sweden. London: Oxford University Press, Humphrey Milford.* 1939. *Price,* $2.50.

HEPARIN is a unique, natural anticoagulant (a polysaccharide of high molecular weight), which contributes towards maintaining the fluidity of the blood and certain of the body fluids. It is produced by a type of cell which histologists have long recognized, situated in the immediate neighborhood of the blood-vessels, as well as in their walls. The author feels that it should be considered as a hormone. It is available in pure form, and is used, clinically, in the treatment and prevention of thrombosis. Given postoperatively, its use seems to prevent thrombus formation.

Because heparin is of value in both medical and surgical conditions, this book should be of interest to every physician and surgeon. Its use simplifies the technic of whole-blood transfusions.

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